A Qualitative Case Study of the Efficacy of an Online English Language Course at the Syrian Virtual University

By

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Abstract

The study was undertaken in the online environment of the English language learning course in one of the institutions of higher education that deliver all its courses entirely online: the Syrian Virtual University (SVU).A proliferation in the use of computer conferencing tools (both video and audio) in language learning has taken place. The use of these tools, together with the relatively "traditional" asynchronous text-based ones, allows educators to cater to different learning needs and language skills. Such tools may require the implementation of new teaching approaches according to the nature of the tool and the pedagogical objectives of using the tool. Synchronous tools are a new medium for course delivery. It is not known if these tools can efficiently support English language teaching and learning when used by virtual learners and tutors together with other elements of the online environment. The purpose of the qualitative case study was to explore the nature of an online environment using integrated tools, and how different elements of the online environment such as content free tools and web-based materials are currently used by learners and tutors. Opportunities and constraints of these tools as well as learner and teacher experiences with these tools and materials were included in the study. Factors that hinder/facilitate language learning using these tools was described and analysed. Data analysis involved qualitative content and thematic analysis. The key findings show that the online environment did provide students with the opportunity of experiencing multiple approaches: self study where students worked alone on the interactive materials and received computer feedback, and learning through audio conferencing where they worked with each other and with the teacher to receive human feedback. These two approaches met different language learning needs, i.e., student's needs for independent learning, and their needs for social learning. It also met the needs of students who were less capable of working independently, especially those who did not have the necessary proficiency in English for working alone. These students had the opportunity to have support from the teacher and from other students. The use of multimodality offered many opportunities for language teaching and learning, but at the same time, there were many constraints that need to be addressed in further research.

Acknowledgements

I would like to thank my supervisors, Dr. Michael Hammond and Mrs Marilyn Hunt, for the advice and guidance they provided during this study. I would like to thank Tishreen University and the Ministry of Higher Education in Syria for their financial support and the Embassy of Syrian Arab Republic in London for their assistance. I would like to thank all the tutors and students from the online Institution who participated in this study. I am immensely grateful to my family. I could never have finished this dissertation without their support: Thank You.

Declaration

This thesis is my own work and has not been previously submitted for the award of a higher degree elsewhere.

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Glossary of Terms

Ambiguous concepts and terms may influence the outcome of a research study (Neuman, 2003); thus, definitions provide the reader with specific, clear meanings of terms (Creswell, 2012). The following definitions are provided to assure clarification of the terms as used in the following chapters.

ELearning. ELearning refers to the use of computer network technology, mainly over the Internet, to provide material (e.g., can include CD, DVD, and computer based training formats) and instruction to individuals (Minhong, Weijia, Jian, and Yang, 2010). In this study, online learning comprises two main forms of course delivery of interactive materials that can be accessed online and audio conferencing.

Computer-mediated communication (CMC). Communication between one or more individuals via internet-based technologies.CMC can be either asynchronous (e.g. emails, discussion forums), or synchronous (live text chat rooms, video conferencing, and audio-graphic conferencing). The use of CMC in education has transformed computers from being a medium that processes information to a tool for both processing information and for communication (Warschauer and Healey, 1998).

Computer-Assisted Language Learning (CALL). CALL can be defined as "the search for and study of applications of the computer in language teaching and learning" (Levy, 1997: 1). Examples of the use of computers in the classroom include computer assisted exercises on CD-ROM, World Wide Web and the use of email exchanges between two classes.

English as a foreign language (EFL). This term generally refers to the study of the English language by speakers whose native language is not English and who study English in a non-English-speaking region (e.g. teaching English for school children within their own country). Reference will also be made to English as a

second language (ESL) in general particularly in the literature review chapter. ESL refers to the study of English within English speaking countries (e.g. teaching English to refugees and immigrants) (Smith, 1976).

Web-based language learning. Language learning that exploits the World Wide Web to provide a variety of hyperlinked multimedia documents (online interactive materials) and computer mediated communication applications as well as an easy access to online databases of resources (Son, 2008). Web-based Learning is also sometimes known as Learning Management Systems (LMS).In this study the distinction between web-based language learning AND Virtual Learning Environment is that the former can be accessed anytime, anywhere which provides support for students who cannot attend regular lectures due to time or geographic restrictions, the latter however require synchronous meetings and interactions.

Virtual Learning Environment (VLE). For the purpose of this study the popular definition of Joint Information Systems Committee (JISC) definition (JISC 2000) of VLE will be used. According to JISC the term refers to' the components in which learners and tutors participate in "on-line interactions" of various kinds including on-line learning. Interactions can refer to interactions with content (computer) as well as those with people (interaction between the teacher and the students and between students among themselves.). In this study these components include the use of static methods (learning portals, hyperlinked pages, assessment, streaming audio and video, and live Web broadcasts), as well as asynchronous interactive methods (e.g. notice board). The difference is that VLE include synchronous methods which involve the use of desk-top video and audio conferencing.

Thematic analysis. Thematic analysis is representative of qualitative research where themes become collections of code that repeat and are alike or linked to each other revealing a pattern (Buetow, 2010). Thematic analysis provides the most regularly used set of thorough and clear procedures for coding and analysis (Shank, 2006).

White boarding. White boarding refers to the placing of shared files and documents (e.g. Microsoft Word documents) on an on-screen white board using the World Wide Web. This application is used to substitute the traditional wall-mounted blackboard (but also the IWB), and where users can make annotations (e.g., write, draw, make comments, instructions etc) on a shared virtual space. This desktop sharing allows remote access to and collaboration on a person's (e.g. the teacher's) computer desktop. This feature is usually integrated to video and audio conferencing products (Figure 1 is an example of using the white boarding feature: Drawing a smiling face for students as an encouraging expression).

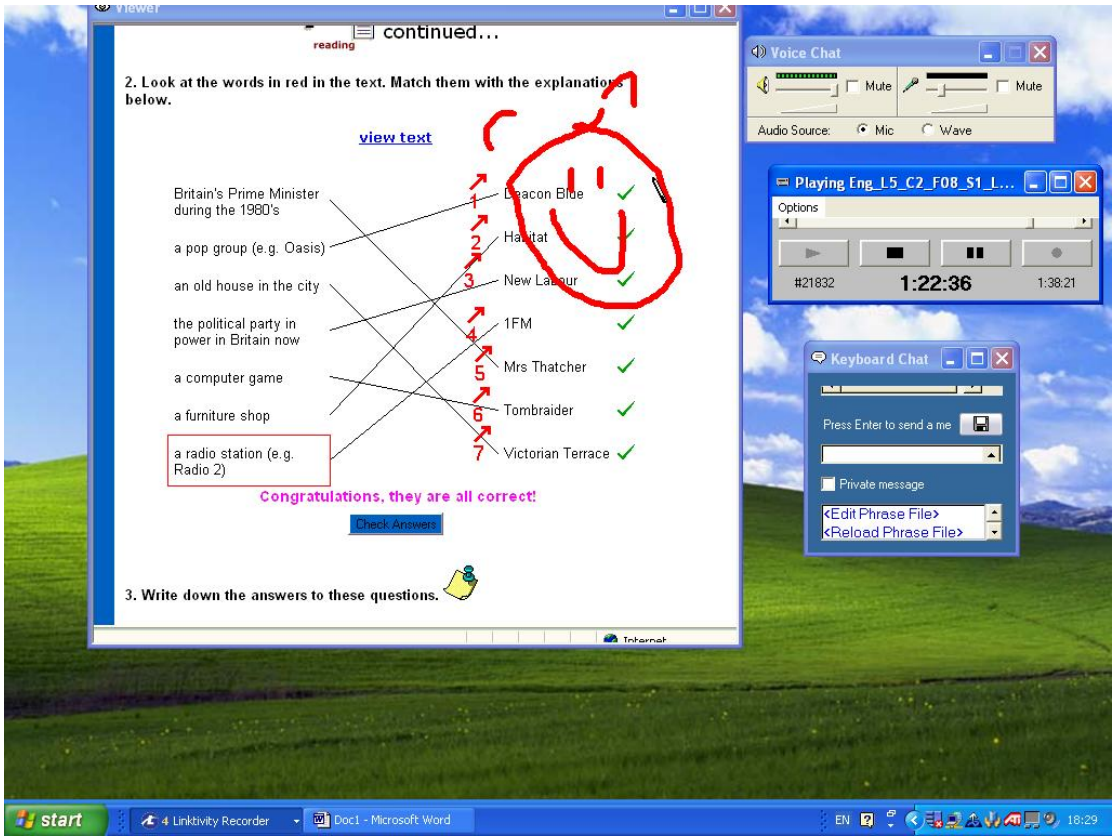

Figure 1. Sample screenshot of annotations on a whiteboard.

Chapter 1.0: Introduction

In recent years, the influence of computer-mediated communication (CMC) and the internet on higher education have become apparent (Bush and Terry, 1997; Coburn, 2010; Eden and Heiman, 2011; MacDonald et al., 2000; Ryan, 2000; Stepp-Greany, 2002; Wallace, 2003; Warschauer and Healey, 1998; Winke and Goertler, 2008). The use of CMC in education added a social dimension to teaching and learning with computers by providing a way for students to interact among themselves and with teachers regardless of geographic distance (Wilson and Stacey, 2004) providing students the opportunities to develop, sustain, and participate in communities of learners (Fakhraie and Hewitt, 2010). Many elements of teaching and learning in a face- to-face context such as class discussions, small group activities, and lectures have been reinvented for an online format that have necessitated new ways of presentation and interaction (Wallace, 2003). The objective of this qualitative case study investigation was to determine if an online environment could support English language learning in the Syrian Virtual University.

1.1 Background of the study

The flexibility of online learning is making learning at a distance an increasingly popular choice for many students. This is especially true for foreign language teaching and learning, where computers have been transformed from tools for information processing or language input to tools for both information processing and communication (Hampel, 2003; Hampel and Felix, et al., 2005; Rodriguez, 2013; Rosell-Aguilar, 2005; Warschauer and Healey, 1998). In addition the rise of the internet and CMC made the design delivery of online courses possible. In this regard, many universities have started to offer courses entirely via the internet (Harris and

DiPablo, 1999; Ubell, 2000; Newman and Couturier, 2002, Motteram and Forrester, 2005). In fact the influence of CMC is potentially so marked that some see it as leading to a paradigm shift in teaching and learning in particular within distance learning.

Specifically, there has been a shift away from traditional views of language education where individuals were seen essentially as empty vessels and teachers as transmitters towards more socio cultural views. The new understanding of teaching and learning in particular within distance learning involved a change in our understanding of methodology and the nature of English language teaching. It involve issues such as the interpretation of what constitutes a classroom, the role of teachers and students, the skills which are required for both teachers and students for working in such classroom (Motterram, 2011, House, 2011, Garrison - 2011).

With the advent of the internet to language teaching and learning, the shift even involved change in understanding of the nature of technology itself and the role the technology can play in enhancing language teaching. The affordances and limitations of new technologies can impact on the pedagogical decisions and practices of teachers. As technology continues to develop researchers and language teachers are facing the challenge of how to utilize new tools in line with sound pedagogical goals. In this regard, Crystal (2006: 26) asserted that:

> It is important to know what the various limitations and facilitations are. A well-established axiom of communication states that users should know the strength as well as the restrictions of their chosen medium, in relation to the uses they subject it to and the purposes they have in mind. People have strong expectations of the internet, and established users evidently have strong feelings about how it should be used to achieve its purposes.

Crystal believed that the affordances and limitations of new technology in the classroom need to be included in how faculty are trained.

Most of the literature associated with the use of CMC tools in language learning focuses on the use of text-based tools such as email and computer conferencing. However, the implementation of audio-graphic conferencing environments for language teaching and learning is still in its infancy (Rosell-Aguilar, 2005; Stickler and Shi, 2013), even though growing in recent years (Hauck and Haezewindt, 1999; Hampel, 2003; Hampel and Hauck, 2004; Hampel and Stickler, 2005; Jenks, 2009; Lamy, 2004; Rosell-Aguilar, 2005; Rosell-Aguilar, 2007; Rosell-Aguilar 2006a; Rosell-Aguilar, 2006b;;Wigham and Chanier, 2013). Most of the reported studies in this area deal with only one element of technology (a) Web-based language learning (Chou, 2005), (b) asynchronous text based CMC such as emails, word processing, discussion forums, blogs, and wikis (Biesenbach-Lucas and Weasenforth, 2001, Godwin-Jones, 2003; Gonzalez-Bueno, 1998, Gonzälez-Bueno and Pérez, 2000; Mahdi1, 2014); or (c) synchronous CMC such as audio-graphic conferencing (Hampel, 2008; Stickler and Shi, 2013).

This qualitative single case study was designed to explore the use of more than one technology within one course. More specifically, the course upon which this study was focused was implemented with audio-graphic conferencing together with text-based tools such as emails and discussion forums for online English language learning. These pedagogical foundations were combined with web-based language learning materials. A discussion of the environment and process of the study will be found in section 1.5 Nature of the Study.

1.2 significance of the study (Statement of the problem)

Students are reported to demand more synchronous opportunities and timely interactions with their teachers and peers, and such research helps inform embedding real time experiences in the virtual classroom (Shi and Bonk, et al., 2008; Oliver,

2012). Findings show that challenges such as lack of social cues, students' inability to do self turn-taking, technical problems, lack of independent learning skills, nature of automated feedback, time constraints, hindered the use of the different formats of delivery in the online environment to their best potential. Students have also demanded opportunities for enhanced feedback such as more humanized and personalized type of feedback than the one that is provided by current software programs through computerized interaction (Felix, 2005a; 2003b).

Online education scholars indicate concern with course quality throughout the various disciplines and departments within their respective institutions (Austin, 2010; Endean et al., 2010; Forsyth et al., 2010, Picciano, 2009; Westerfelt, 2011). Faculty express concern that instructional goals for online education are not associated with adequate support (Graham and Jones, 2011; Lee et al., 1010; Singleton and Session, 2011). Faculty members also desire a system that supports accomplishing online education goals while maintaining academic quality and rigor and supporting faculty development of online education courses (Berta, 2011).

1.3 Purpose of the study

A search of the literature revealed an unbalanced and incomplete body of empirical knowledge about how technology offers faculty and learners opportunities that cannot be reached in regular teaching (Collis 1996; Harasim, 1993; Ricketts et al. 2000). The purpose of this qualitative case study investigation was to determine if an online environment could support English language learning in the Syrian Virtual University, and the result will be a contribution to the knowledge because no study has been conducted to determine if such pedagogy has efficacy. The online environment provided a natural setting with which to explore the complex dimensions and characteristics by observation and probing of student and teacher perceptions,

attitudes, and lived experiences. Opportunities and constraints at the Syrian Virtual University concomitant with the online environment used for English language teaching and learning were probed. As well, the extent to which an audio-graphic conferencing environment was implemented for the delivery of interactive web-based materials supporting English language teaching and learning from a constructivist learning perspective was explored.

Participants were eight faculty members engaged in teaching the English language course described in following sections of this chapter. During the study, 200 students took the course. The questionnaires were sent to 43 of them and competed by 24 students, which is discussed in Chapter 3, and the results are revealed in Chapter 4.0. Eleven of the students were interviewed and results are revealed in Chapters 4.0 and 5.0. The importance of the results stems from the fact that the opportunities and constraints lie at the heart of any critical appraisal of technology. As a result of this contribution to the body of knowledge practitioners can make better decisions regarding the implementation of online learning for the teaching of language. The aim of this particular study was to investigate any opportunities connected with the online environment or connected with the use of this environment that either made online learning work for students and faculty, or hindered it.

1.4 Research questions

Based on information in the preceding sections the following research question drove the methodology of the qualitative case study. The primary research question that guided the methodology was:

RQ: Can the online environment support English language teaching and learning in the Syrian Online University?

Subordinate research questions were:

RQ1: What is the nature of the current online environment?

RQ2: How (in what manner) is the online environment used by faculty and students in the English programme at the Syrian Virtual University?

RQ3: What are faculty and student perceptions of the opportunities provided by the online environment in the English programme of the Syrian Virtual University?

RQ4: What are faculty and student perceptions of the constraints of the online environment in the English programme of the Syrian Virtual University?

The present study relied in part on interview data. "Data extracted from interviews are subject to the limitations imposed on all instruments which rely on language for conveying and extracting meaning, namely, the reliability and validity of subjective data" (Coffin, 1997: 7). The interview process was guided by the research questions stated above and supplemented with 10 open-ended questions. An interview protocol was used to ensure consistency across all interviews. Although the interviews were semi-structured, two unstructured questions were used to allow participants to talk about other topics as they chose.

The study was overseen by the author, a teaching assistant in the English department of the Syrian Virtual University who taught grammar and composition to undergraduate students for 2 years in another Syrian university. The author of the study and primary researcher has a postgraduate degree in applied linguistics and educational research methods, all of which were qualifications for conducting the present study.

1.5. Appropriateness of the research method and design. Selecting a research methodology, whether quantitative, qualitative, or mixed-method, results from insights into the capabilities of each method as it pertains to the research problem

(Mijis, 2011), in the case of the present study, an exploration to determine if an online environment could support English language learning in the Syrian Virtual University. The three primary methods of data collection, quantitative, qualitative, and mixed methods were considered as well as various designs inherent to each one. A quantitative design resulting in exact numerical measurements was deemed inappropriate for the study of a phenomenon as questions that result in precise numerical data sorted statistically to offer numerical explanations were not contemplated (Creswell, 2012).

The selected method was qualitative, and the design selected was single case study. The single case study design provided a form of data collection that resulted in insightful, qualitative interpretation and description of the use of different aspects of the online environment and the learning processes and needs within the chosen setting and with the purposively selected participants. This approach was suitable because it offered a means to investigate a complex entity or unit (the English course in the online environment) with multiple characteristics of potential importance in understanding the phenomenon.

In qualitative research, the researcher is the main instrument of data collection and data analysis (Creswell, 1998:14; Bogdan and Biklen, 1998:4). Merriam (1998) argued that the qualitative researcher must be one with (a) a tolerance for ambiguity, (b) must possess an investigative nature and (c) must possess sensitivity to personal prejudices. In addition, the researcher must be a good communicator, and have some knowledge of the subject matter under study.

The online environment constituted a bounded system (Stake, 1995) as it was bounded by time (the duration of data collection) and place (a single virtual environment). This entity is complex and the aim is to deeply understand the context

and setting (Creswell, 1012) and create a rich picture of the phenomenon. By concentrating on a single entity with clear boundaries and multiple characteristics (Merriam, 1988) the case study approach provided the forum with which to uncover the significant factors that supported or hindered the learning processes in the chosen environment.

1.6. Research context

The study was undertaken in the online environment of the English language learning course at Syrian Virtual University, and institution of higher education that delivers all its courses entirely online. The courses the institution is available for Arab students worldwide. All the students in this institution have access to their own personal Arab tutors who are specialists in their field of education. The Syrian Virtual University was established in 2002 by the Ministry of Higher Education in Syria and provides a completely virtual education. It is based in Damascus at the Ministry of Higher Education.

This university has partnerships with universities in Europe, America, and Canada. It provides students with two kinds of academic programs: local programs, and international programs. The local programs are domestic programs designed and authorised by experts and taught by local academic staff while the international programs are partnership programs in cooperation with the partner universities. Partnership programs are often taught entirely through the medium of English, while most of the domestic programs are taught in Arabic.

Syrian Virtual University has established free of charge Telecenters countrywide with broadband Internet to give all students in Syria, especially in remote areas, an equal opportunity of internet access. The aim is that students can attend lectures at a local Telecentre or from home or even from work or from any place that

provides access to the internet. Flexible distance learning programs allow students to study and work at the same time, which satisfies lifestyle commitments. Telecenters are also Certified Testing Centers in which the students can sit for their proctored examinations throughout the year.

Two types of academic programs are offered: partnership programs that are provided in cooperation with foreign universities, and domestic programs authored by the university and taught by local Syrian professors. Most domestic programs are related to computer science and provided in Arabic. Other programs are economics, law, and teacher education. The university maintains an Instructional Information Technology team to ensure reliable solutions support the online mission and objectives and provide technical assistance for students and faculty.

1.6.1. English language curriculum at the university. Learning English is one of the requirements of enrolling in this university, especially programs that are taught through the medium of English where students have to acquire a certain level of English proficiency to allow them to succeed. Three reasons why students at the institution are encouraged to learn English are for study, for future employment, and for jobs. The institution offers a domestic program (or a foundation year) designed mainly for the purpose of preparing Syrian Virtual University students with English and optionally with IT, communication skills, and time management.

This program is also open to anyone who wishes to learn English for career development, to study in a foreign university or school, to use English as a global language, or for self development. The foundation-year curriculum has five levels of English language proficiency: Elementary, Pre-intermediate, Intermediate, Upper Intermediate, and Advanced. Students are required to score at least 30 of 100 in an entry test. Having passed, students can register in any of the five levels of the English

course, and enrol at any time of the year. Placement test scores decide the starting level for each student; thus, the length of the foundational program is decided for each student according to proficiency in English.

1.6.2. Delivery. Online classes are held throughout the year. Each course lasts for 9 weeks. The following table gives an overview of how the courses were scheduled during the 2007/2008 academic year.

Table 1. Starting date and length of language courses in 2007/2008.

Course	Starting date	Weeks of the year
Course 1	Sep-19	39 - 47
Course 2	Nov-28	49 – 57
Course 3	Feb-05	7 - 15
Course 4	Apr-18	17 - 25
Course 5	Jun-27	27 - 35

1.6.3.The virtual classroom. The classroom in the academic institution used in this study was a virtual learning space where students and faculty could communicate in real time through different modern technologies and collaboration products. There was no physical classroom as in face-to-face education. Instead, the teacher presented learning materials, organized and coordinated classroom activities online, which was made possible through an audio-graphic conferencing program.

This provided users with tools to send and receive data such as text and graphics, and to communicate via audio simultaneously.

Videoconferencing technology enabled the virtual class members and their teacher to use audio and video to talk to each other synchronously and to see each other, creating an environment that was close to a traditional classroom environment. The video feature was not used in the virtual classroom at the time of the present study. Instead, interaction between teacher and learner was achieved through two-way voice communication with a combination of whiteboard, chat, desktop, and application sharing.

Some of these technologies are electronic equivalents of features of F2F classrooms. The whiteboard used in the virtual classroom, for example, was an electronic version of the dry-erase chalkboard that allowed the student to view what a presenter, whether the teacher or another student, wrote or drew. Another component of the virtual classroom that supported interactivity was the desktop and application sharing. This feature enabled students located in different geographical locations to view the teacher's desktop and remotely use a shared application or document in real time. Students in the session could be given the teacher's platform or the podium when asked to work on a certain exercise. Students could raise their hands to get remote access to the shared document and do exercises related to the course material. Communication in the virtual class was facilitated by real time text-based conversation accessible by all individuals in the class, with the possibility for two members or more to have a private conversation. Chat applications were used by students and faculty to ask questions and receive responses, and for faculty feedback.

Another distinctive feature of the virtual classroom was that the live sessions were captured on teacher's recording devices and uploaded to the class website for

replay. Students could download and view the recorded sessions on demand. Some functions used in the virtual class such as whiteboard, voice chat, keyboard chat, and replay function are illustrated in Figure 2.

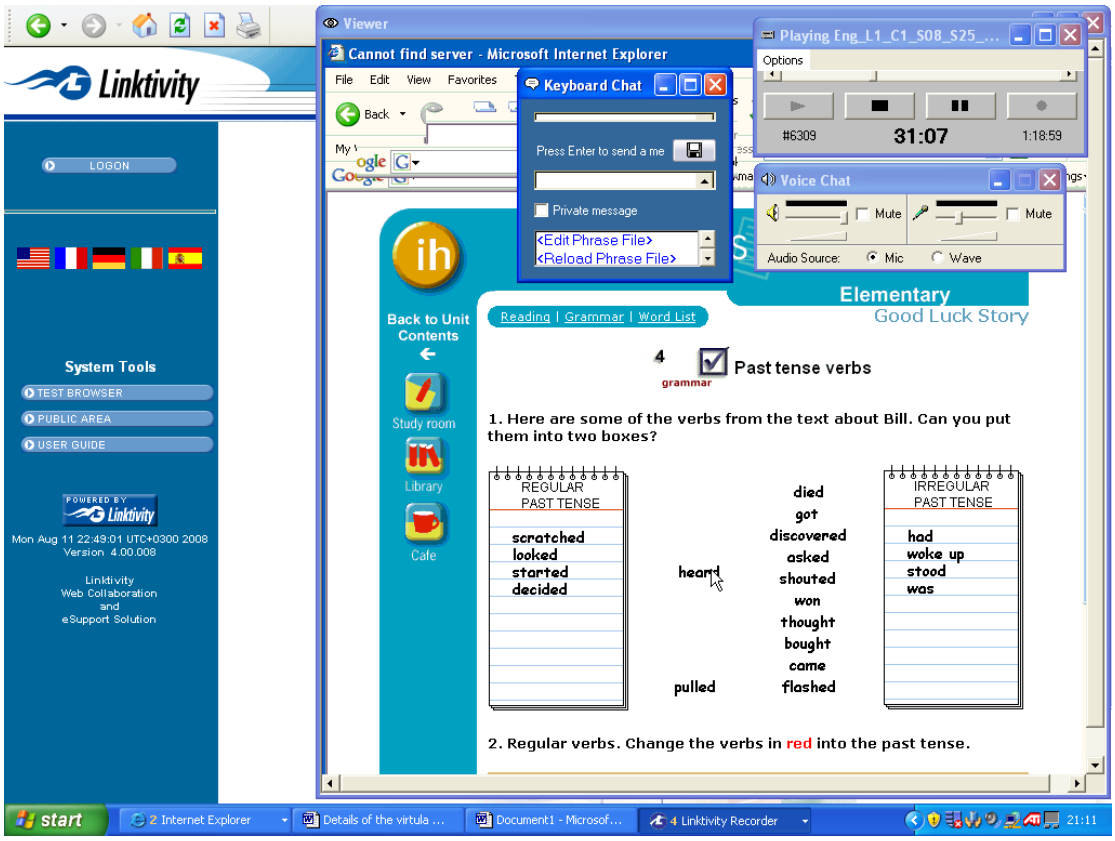

Figure 2. Sample screenshot of multiple access points for students

Figure 3 shows how sessions can be recorded and uploaded or downloaded to provide both students and faculty with ease of access and the ability to change the format.

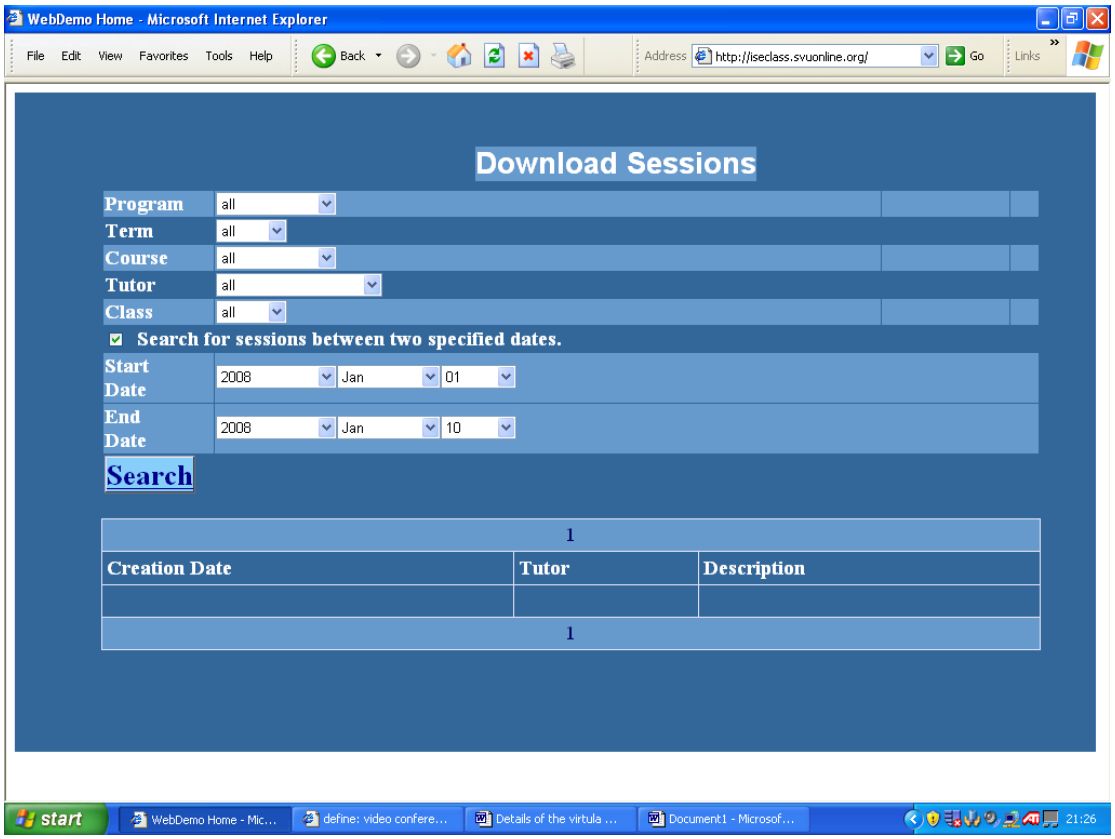

Figure 3. Sample screenshot of how sessions are recorded and uploaded/downloaded

1.6.4. The audio-graphic conferencing environment. The educational system used to deliver the English course is Web Demo (provided by Linktivity: http://www.linktivity.com), a real-time communications and remote control software tool that enables concurrent web conferencing and collaboration. This web conferencing application supports Power Point and HTML, Flash, Video, Audio, Word documents, Excel sheets, and others that offer tools for presentation (Figure 3)

Faculty and students can meet and present online by using a combination of audio, video, white-boarding, application sharing, and file transfer. For students to attend the online sessions or play the recorded sessions, appropriate software such as MVM (Microsoft Java Virtual Machine), or Sun Java need to be installed on student machines in addition to the collaboration player Web Demo. As well, some hardware requirements such as a compatible browser, an appropriate internet connection, and

operating system (Figure 4), microphone, and sound card are also needed. These requirements can be beyond the financial capability of some students. As a result, the institution has established free centres (Telecentres) that offer a reliable and relatively fast Internet connection for those students who wish to attend the online class. Students can also use the Telecentres to access and work on the materials online and to study and do research.

Each virtual class officially has between 15 and 25 students, a typical session is supposed to last for 2 hours. However, the actual sessions vary in their length with some lasting only 30 minutes and others lasting 1 1/2 hours. Faculty can schedule extra sessions when required. Figure 4 illustrates the use of a word processor during an online class.

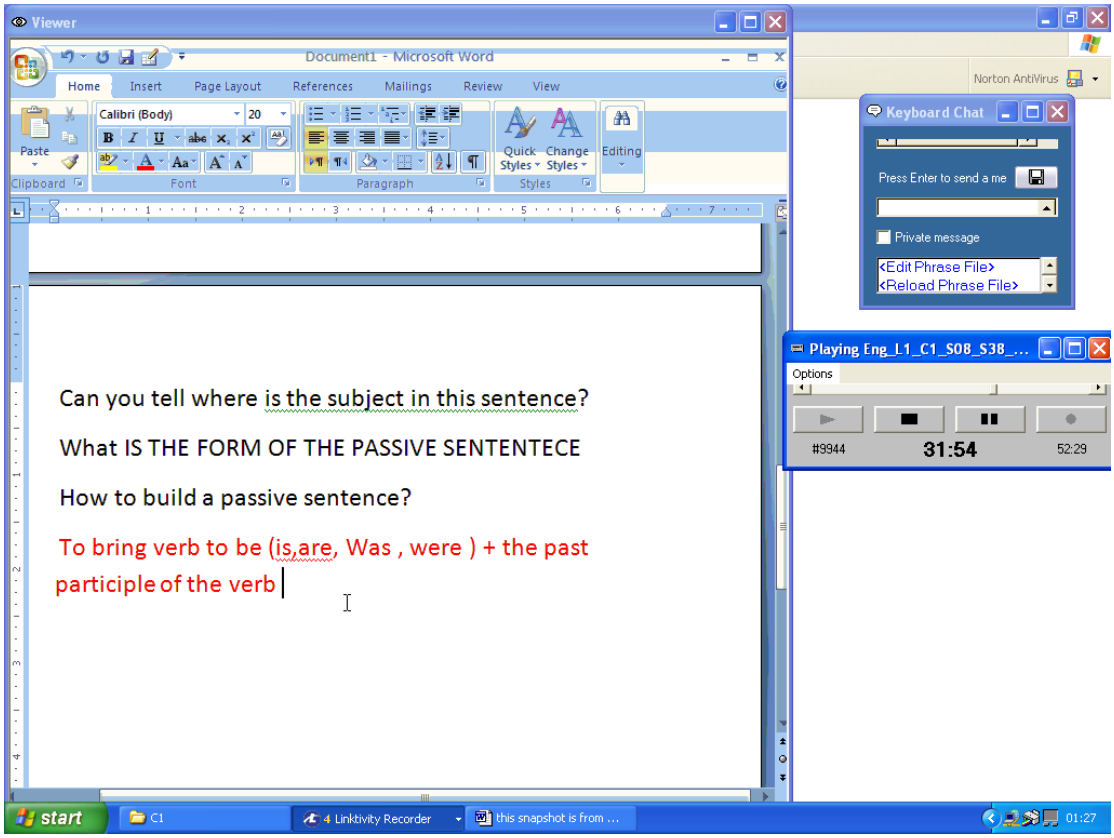

Figure 4. Sample screenshot showing use of a word processor during online classes

1.6.5. Course content. Each class in the English program has two online sessions a week when faculty work with their students on the course materials with a specific amount of content presented in each session depending on the complexity of the materials but also on internet connection as this factor can make the virtual session progress slowly. The course materials are self-paced content developed and provided by Net languages (http://www2.netlanguages.com/info/english/index.php), a virtual language school that provides language training courses and services to different clients including educational institutions and individual students. The course materials are available online and can be accessed after entering a password paired with username.

Learners are expected to work on these materials at their own pace and prepare for the next lesson in order to be able to collaborate with the teacher in the online session. Offering self-paced content is recommended in online learning when time is limited and a lot of information needs to be communicated to the virtual class during the online sessions. It is also recommended when internet connection or bandwidth can be problematic when presenting live and recorded videos during the online session. The virtual classroom includes presentation of some pictures and graphics but not video and music. The self-paced content is taught in combination with extra resources and URLs to external, free online English courses available on the Web; English exercises; and to TOEFL references and tests.

1.6.6. Web-based language learning environment. The web-based environments offer automated online materials which are designed for self study. The online materials in the virtual university have five different levels of language proficiency

. Each of these levels has 13 units with different sections that focus on different language areas such as reading, writing, pronunciation, listening, vocabulary, and grammar (See Figures 1 and 2). The materials can be accessed from the University website. Students can gain access to these materials by entering their usernames and password (Figure 5).

Figure 5. Sample screenshot of different units of the online materials

Online materials are divided into units that focus on a number of different language areas. Each of these units revolves around one topic. Skills and language areas are presented in the following order: reading, vocabulary, grammar, listening, and pronunciation (Figure 6).

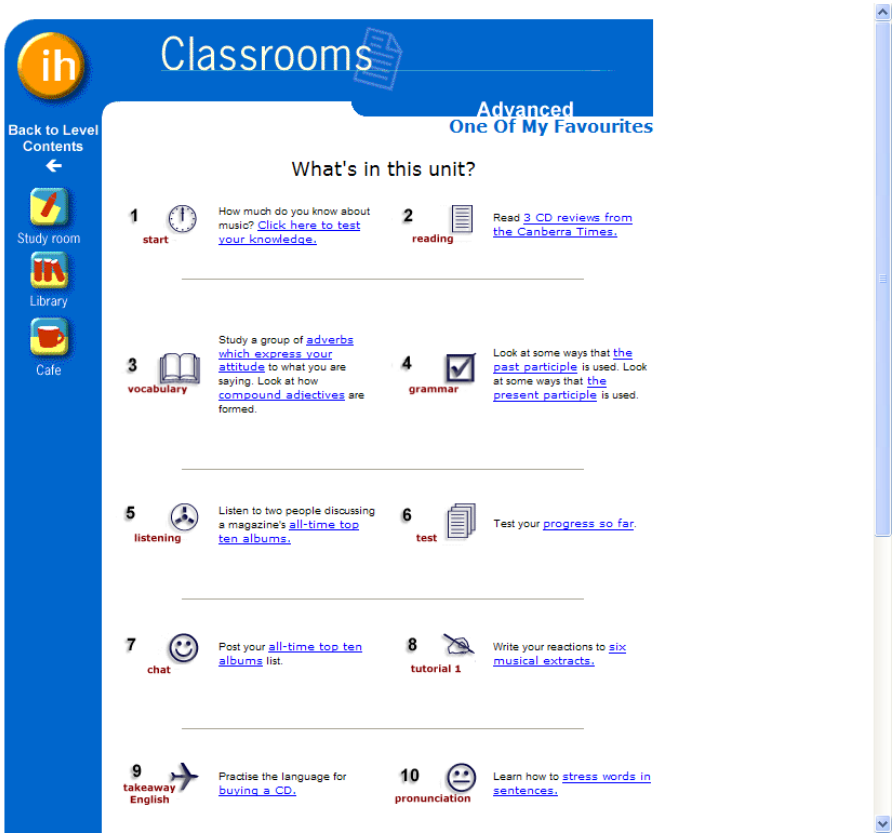

Figure 6. Sample screenshot showing order of language areas in a typical unit

The General English Course's Rationale (a handbook issued by Net Languages that describes the different aspects of the materials including design, structure) states that the topic cohesion of the unit "allows for continued recycling of language and vocabulary that occurs during the unit, and provides a support for the student (Net Languages General English courses Rationale: 2005: 2). This process of recycling the language is then followed with a final task which is an extended piece of writing at the end of each unit and which is based on the content of the unit. For example, the topic of one of the units in the elementary level is about Sydney Australia. This unit starts with a reading text that offers description about this city such as history and life style, followed with comprehension questions. The vocabulary section of the unit deals with geography and names of countries. There are exercises in the grammar section, and then students listen to a tape where two

people compare cities, students then are given homework about describing where places are. Finally, the unit ends with the writing task where students are asked to write a guide to their cities. The different sections in each unit are thematically linked in order to offer support for students when they work on this writing task. According to the General English Course's Rationale, the content and language areas of the unit were presented in this order to provide language input to do this writing task where "students have the opportunity to work in a less controlled way, […] at text level, using the language that has been covered in the unit to produce an extended piece of work" and where it was argued that "it is clearly important to equip students with the language they may need to complete this task successfully" (Net Languages General English courses Rationale, 2005: 2).

1.6.7. Resources. The online materials are integrated with tools and resources that support students during their learning. These materials are integrated, for example, with a grammar reference which students can use while working on the grammar practice exercises to refer to grammar rules and to get more explanations and examples of the topics and grammar points under review. The reading texts in each unit are also linked to a reading reference with a list of vocabularies where students can find definitions of unfamiliar words in their particular context (Figure 6). Students can use these references when working through units by clicking on the related link at the top of the pages. In addition to these two references, the materials are supported with the virtual library. This is a virtual space with links to a number of different websites rich in multimedia and images. The library has three sections: a reference section, an online reading section, and a listening and video materials section. The reference section contains online dictionaries with audio pronunciation, encyclopaedias with information on a vast number of topics; students may also use

the reference section to access encyclopaedias with atlases and biographies, talking dictionaries, thesaurus, grammar guides, explanations, and extra exercises for different levels.

The reading section includes authentic reading materials of different levels, like international newspapers and magazines which students can use to develop their reading skills. These reading materials cater for the different proficiency levels as they include materials such as simplified online books in English, reading materials with word lists and associated questions, links to archived reports, news websites written in special English, complete electronic books, a collection of short stories grouped by category, and quizzes with given solution.

Finally, the listening and video materials section offers varied audio and video resource with transcripts for students who wish to improve their non-interactive listening skills. Students can, for instance, listen to audio news and to a selection of live radios, and to reports on up to date affairs in simplified and non-simplified English, watch short videos and TV clips. Students can move freely between resources that include video, audio, images and text which support different learning styles and needs. The use of the multimedia arguably makes the materials visually pleasing and motivating for students. The possibility of choosing from a variety of formats may also motivate students to complete the activity at hand, and give meaning and purpose to their effort when doing the learning tasks. Figure 7 shows how students are invited to explore library resources.

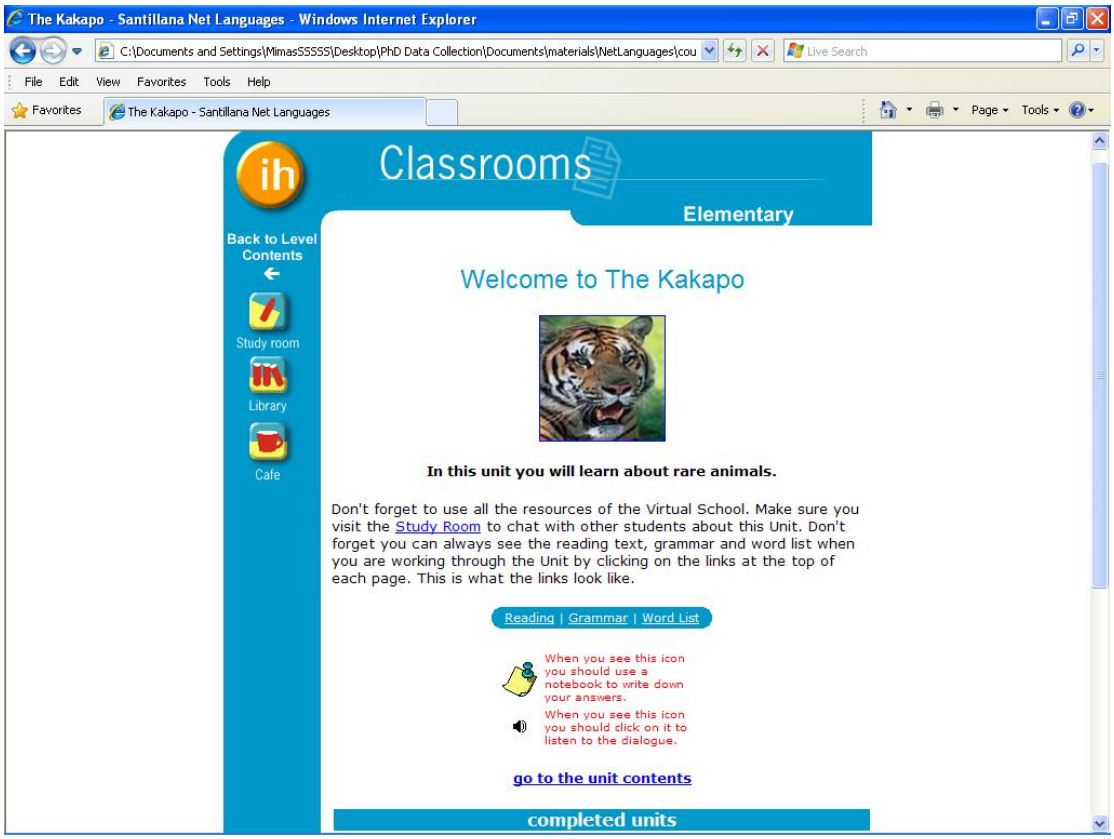

Figure 7. Sample screenshot showing how students are invited to explore resources

1.6.8. Additional materials. In addition to the general Net Languages English materials, faculty sometimes use (especially with intermediate and advanced levels) additional language materials in order to build student's knowledge and skills in specific areas of language learning such as business English and academic English. Academic English activities are based on Interactions Mosaic series, which is a comprehensive series for teaching students academic content to increase students' academic success (see http://highered.mcgraw-hill.com/sites/0072331046/#). The series includes five levels for beginners to advanced students. It focuses on teaching the four skills: reading, writing, speaking and listening, but also on grammar.

In addition, the supplementary materials contain an intermediate business English course book (in addition to Class CD and Multi-Rom) that is part of the

Market Leader interactive series published by Longman (see: http://www.pearsonlongman.com/ae/multimedia/programs/mli.htm). This series ranges from intermediate to advanced and combines a number of activities that aim to develop students' skills in business language and concepts through authentic business situations drawing from real world materials and resources such as the Financial Times. Figure 8 illustrates an example of the connection with real world properties.

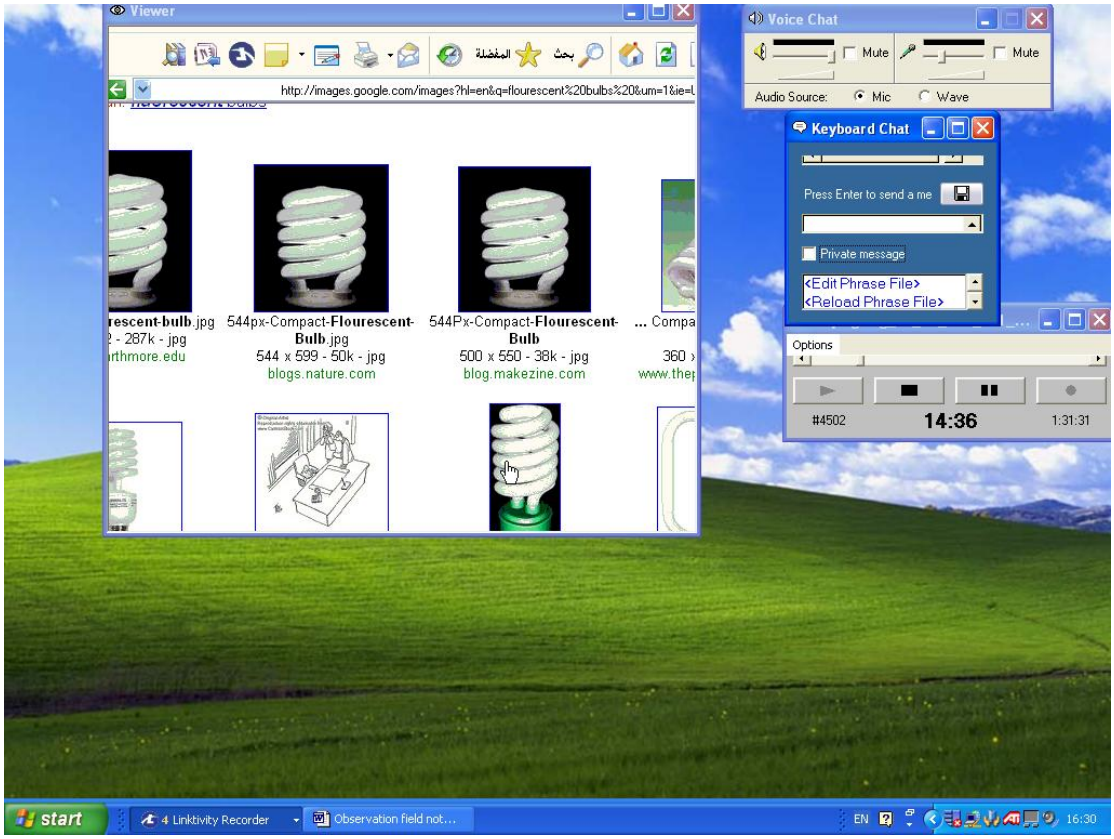

Figure 8. Sample screen shot showing students authentic images and digitized realia

1.7. Participants. There were 74 students in the English Programme in the 2006/2007 academic year. The number increased to about 200 students in the academic year 2007/2008. Each level consisted of a number of virtual classes, and each of these virtual classes had between 15 and 25 students. Each class had four synchronous sessions a week and each session lasted between 30 minutes to 1 1/2

hours. Students must attend a certain number of the online sessions (this was 75% of the synchronous sessions or/and the recorded sessions, which is equivalent to 3 of 4 synchronous meetings a week) to be eligible for sitting the language test at the end of the course. Attendance and participation in the online sessions was assigned a certain mark (10 grades out of 100). Students in the course can use emails to contact their faculty outside the scheduled sessions

1.8. Assumptions

According to Leedy and Ormrod (2005), research assumptions are self-evident truths that are required to be validate the research. The present study implemented multiple qualitative data collection followed by qualitative data analysis that revealed the experiences of the participants (Patton, 2002). All reasonable procedures were taken to ensure the objectivity of the contributions made by the participants and the analysis thereof. Nix (2001: 20) argued:

> It is the researcher's responsibility to provide the depth of description and opportunity for interpretation by interactants through formal and informal interviews and observations; however, the reader is responsible for taking that information and making it personally relevant to the readers setting.

Interviews with teachers and students provided the opportunity to explore perceptions (Creswell, 2005) of faculty and students during a particular English language course at a particular time with descriptions and interpretations used to help emphasise the voices and actions of participants (McRobbie and Tobin, 1995). The following assumptions were inherent in the qualitative single case study design. It was assumed the case study design would capture the fundamental meaning of the experiences of students in the target online class and would reveal the essence of their college experience. As well, it was assumed the participants would reflect a cross section of ethnicity, race, gender, and academic disciplines typical of the Syrian

Virtual University. It was assumed that student volunteers were unbiased and truthful in all responses and that the interviews would reveal a common area of knowledge. It was assumed that participants would complete the open ended questions in a truthful, conscientious manner so responses would reflect actual perceptions of their online learning experience, and that participants were honest with responses to interview questions. The semi-structured dialogue format for this qualitative study was based upon the assumption that participants would provide candid perceptions of their perceptions. Finally, the researcher assumed that participant contributions would provide insight into the perspectives of other students at Syrian Virtual University.

For the purposes of this study, an assumption existed that the researcher's personal bias did not skew the findings. The researcher made every attempt to remain unbiased as data was collected and analyzed and to ask questions that did not lead respondents to a limited set of choices. At the same time, we have to admit that qualitative studies are bounded by personal bias and personal values of the researcher and by cultural norms, assumptions, theories, and perspectives (Lincoln and Guba, 1985). Patton (1990) asserted that case studies are not precise, and therefore, not adequately unbiased. As well, interpretation by the researcher of the notes and codes from the interviews might have involved some conscious or unconscious biases affecting the validity of the results (Guba and Lincoln, 1981; Hamel, (1993). Hence, it is important for the qualitative researcher to give the reader a thick description about the research process and to admit this subjectivity. A reflective analysis of my role as a researcher and how this role may have influenced the research process was discussed in chapter three.

1.9. Personal statement of interest

This study concerns the English language learning programme described above. The research context in this study was chosen due to two main reasons. The first reason is related to the researcher's professional background. The study was conducted by a teaching assistant in the English department of one of the local Syrian Universities who taught grammar and composition to undergraduate students for 2 years .I studied English in Syrian schools and carried out my undergraduate studies (BA) in English literature in one of the local universities. Most people who hold B.A. in English literature in Syria work as English teachers in elementary and secondary schools (which include grades 7 -12). After I graduated, I taught English as a foreign language as a part time job in these schools. I also taught English (writing and grammar) for first and second year students in the English department, and English for specific purposes for students in different faculties in a University in Syria. My interest in researching English language learning was influenced by this educational and professional background. At that time I did not have any specific interest in the use of technology in language learning. However, the university had a plan to have a qualified staff in the area of CALL. Sending students to study abroad is part of the university's strategy to have a qualified staff who can introduce technology to the foreign language learning courses. I was open minded to this new approach in language learning and when I graduated I gained a scholarship from the same university in Syria to continue my postgraduate studies in the U.K.in CALL. Before I came to the U.K. I had to take TOEFL test. As a TOEFL candidate I used computers in order to prepare for this test. This experience triggered my interest in the use of computer technology in English language teaching and learning. Although I had paper based option, I found it much easier and more interesting to prepare for the test using electronic forms such as CD and web based exercises. As part of this process I

had to set for English language proficiency test which was administered via computer. This was my first experience with using computers in language learning, it was a very insightful experience as I found that using computers made the learning of English much more interactive than I ever experienced as a student. Technology offered me endless resources for practice in an interactive way, and I worked at my own pace. This in turn affected how I feel about computer technology and triggered my interest in using computers in language learning. Specifically, I was in favour of using ICT in general in language learning and believed that students who do not have access to technology to support their language learning may be seriously disadvantaged and was keen to know how computers can be used in language learning.

This professional and personal background gave me another reason to be interested in investigating the Syrian context as it would contribute to my professional development. Nevertheless, other contexts in the U.K. were also considered. However, access seemed to be difficult (which became obvious after a few email exchanges with some individuals who worked in these teaching contexts and who were contacted for the purpose of this study). Although gaining access to the Syrian context proved to be a challenging task, it was possible to gain an initial approval for doing the study in this context, which was then confirmed in a formal letter.

1.10. Summary

The dissertation is an account of an exploration of an online environment with faculty and student perceptions of opportunities and constraints of the environment for foreign language teaching and learning. Online learning in this study includes web-based language and virtual classroom learning made possible through the use of audio-graphic conferencing application. The study was focused on student and faculty perceptions and experiences in teaching and learning. The pedagogical

potential of these technologies for future applications in foreign language teaching and learning are evaluated from a constructivist learning perspective.

Chapter 1.0 contained the background of the problem and the purpose of the study, the methodology was summarized, and assumptions and limitations were listed. Chapter 2.0 contains a detailed discussion of the literature that informs this investigation. The methodology is contained in Chapter 3.0. Methods and sources employed in this study are described. The analysis of the qualitative data from the different research methods are presented in Chapters 4.0 and 5.0. Chapter 6.0 is dedicated to a discussion of findings from this inquiry, which are compared and contrasted with those from studies in the same area in the literature.

Chapter 2.0: Literature Review

This chapter presents the literature relevant to this research study. The chapter is divided into four sections. The first section deals with distance and online learning and the use of computer technology for learning. Five methods of delivery were identified: written CMC, video, audio, audio-graphic CMC, and Web-based learning. The second section contains a brief review of the theories that contributed to the framework of this study: second language acquisition theories, theories of social presence, social cues theories, and multimodality. The third section of this review is focused on the different approaches in language teaching and learning as well as the main theories that are believed to have influenced this field: behaviourism, and constructivism. The fourth section is focused on the challenges and opportunities of online learning environments.

2.1 Documentation

The literature review process was a meticulous search of recent periodicals, books, peer-reviewed journal articles, and research conducted by government agencies and higher educational institutions. Major journal articles researched were in the computer assisted language learning journal, CALICO Journal, ReCALL Journal, British Journal of Educational Technology, Australian Journal of Educational Technology, Language, Learning and Technology Journal, International Journal of Educational Telecommunications, The JALT CALL Journal, Modern Language Journal, Educational researcher journal, Technology and Teacher Education journal, Asian EFL journal, International Journal of Applied Linguistics, Applied Linguistics journal, Online Journal of Distance Learning Administration Teaching and Teacher Education journal Language learning journal .The Universities of Warwick's and Manchester's Library databases were instrumental in the research process. The

following key phrases identified appropriate reference material: (a) distance and online learning, (b) computer assisted language learning, (c) technology and pedagogy, (d) English language teaching and learning, (e) online learning opportunities and challenges (f), and teaching English as a foreign language.

While the use of technology in language learning has been extensively studied in American, European, Chinese, and other contexts, there was very little published research based on the Syrian context. Specifically, only one article was published in peer reviewed journal. This was conducted by Albirini and was published in 2006 in Computer and Technology Journal. The article was based on the author's PhD dissertation which was completed in 2004 and was available online. The article explored the factors associated with the attitude of high school EFL teachers in Syria toward information and communication technology. One unpublished PhD dissertation was available at Manchester library data base. The study was conducted in the SVU context. It was completed and submitted in 2006 in fulfilment of PhD degree by a Syrian student in UK. The study used ethnographic methods to investigate the SVU culture. One of the SVU staff who was teaching English in the SVU was also conducted end of course evaluation to gauge students' attitude about the course.

2.2 Distance and online learning

This section examines is an exploration of issues associated with distance learning including technologies used for course delivery of online courses. The underlying theoretical and pedagogical principles that inform successful use of CMC to deliver distance education are also discussed.

2.2.1. The evolution of distance learning. Distance education refers to the mode of teaching and learning during which teacher and student are separated by

physical distance. Different types of technologies are implemented including audio, video, data, and/or print mediums are used in combination with face-to-face communication (Caperton, 2012; Wilson and Stacey, 2004). Internet-based distance education programmes are increasingly used globally (Fakhraie and Hewitt, 2010).

With regard to the evolution of distance learning (Bates, 2008), each stage can be seen as offering greater flexibility and opportunity for participation. During the evolution, different technologies have been employed such as radio, television, and more recently, computers (Hill, 1997: 75). These stages are summarised (Taylor, 2001: 2; Bates: 2008: 217) as follows:

1. The correspondence model of learning that is based on mail delivery of print based learning material.

2. The multimedia model that incorporated print, audio and video, and involved the broadcasting of course content.

3. The tele-learning model that provided synchronous two-way communication with the capacity for audio and video transmission.

4. The flexible learning model which used the Internet for course delivery and that combined asynchronous learning with interactive multimedia;

5. The "intelligent" flexible learning model that emphasized the characteristics of the Internet and the Web for promoting automation and student control.

The last two stages of distance learning were characterised by the use of computer technology and the Internet for online delivery of distance courses.

2.2.2. Learning modes and technologies used in delivery. The following section includes a brief discussion of three types of technologies, namely, written CMC, audio-graphic CMC, and Web-based learning.

2.2.2.1. ***Written CMC.*** Written CMC can be either synchronous or asynchronous. Asynchronous communication takes place in delayed time (Warschauer and Healey, 1998) and enables learners to log on to online discussions at different times, and to communicate by posting messages to peers or the teacher. The early stages of the use of CMC in distance language learning involved the use of text-based applications where participants could interact synchronously and asynchronously using tools such as emails, discussion forum, and chat rooms (Hauck and Haezewindt, 1999; Rosell-Aguilar, 2006a; Shi and Bonk et al. 2008). There is a large body of research on the use of written CMC in language teaching and learning (Hartman et al., 1991; Manning, 1996; Warschauer, 1996b; Tseng and Tsai et al., 2013). The bulk of studies in this field focus on general experiences of using the medium (Hampel, 2003).

An advantage attributed to written CMC is related to developing critical thinking skills (Fageeh and Mekheimer, 2013), particularly through the use of discussion forums where participants read each others' messages and reflect on them (Shetzer and Warschauer, 2000). Garrison and Anderson et al. (1999: 90) claimed that text-based communication allows time for reflection, rendering this method of communication preferable to oral communication. Hammond (2000:260) suggests that "forums provide quick and easy communication which alerts the learner to the possibility of sharing ideas and experience; messages are permanent which enables sustained reflection; and messages are asynchronous so that members can contribute as and how they wish". This may be crucial "when the objective is higher-order cognitive learning [and] when the objective is to facilitate thinking about complex issues and deep, meaningful learning."

Other studies that support the view that asynchronous written discussions can promote student critical thinking include Newman and Webb et al. (1996) who compared face-to-face and asynchronous seminars and argued that students in the latter mode of learning were more likely to make important statements, link ideas, and produce new ideas (Wang and Woo, 2007). Marra and Moore et al. (2004: 23) contended asynchronous discussions "potentially promote critical thinking, meaningful problem solving, and knowledge construction." Meyer (2003: 55) evaluated threaded discussions for evidence of higher-order thinking by conducting a content analysis. The analysis offered "support for the assertion that higher-order thinking can and does occur in online discussions."

Text-based tools are limited as they do not include speaking, which is a significant skill in language teaching (Felix, 2004; Hedge, 2000; Underwood, 1984; Yu, 2013). Practitioners in education and especially in language learning have started to use many tools that support the use of audio for speaking (Eaton, 2010) and for "developing communicative aural and oral skills" (Hampel, 2003: 23) as discussed in the following section.

2.2.2.2 Video *and audio-graphic CMC*. Synchronous communication (Chen, and Yang, 2014; Finkelstein, 2006) refers to real-time (as opposed to asynchronous) communication. Students are online at the same time. Examples of synchronous communication tools are real-time audio conferencing systems (Johnson, 2006), video conferencing systems (Coburn, 2010), and audio-graphic conferencing systems. These synchronous learning applications support the delivery of "learning activities which are similar to those conducted in traditional face-to-face classroom" (Chen and Wang et al., 2008: 361), including the delivery of online language courses (Wang and Chen, 2007). Audio conferencing systems (Kenning, 2010, Wimba Voice Direct),

allow for two-way audio transmissions and for communication to occur between individuals in one-to-one and one-to-many modes (e.g. teacher-to-whole class interaction). Video conferencing systems allow for both audio facility and two way video transmissions. Audio conferencing systems have been available since the mid-1990s first through dedicated applications and later through free application commonly available for communication such as NetMeeting, Yahoo!, or Windows Messenger (Rosell-Aguilar, 2006b).

Recently, the development of audio-graphic conferencing systems allowed for a multimodal environment where a multiplicity of communication modes can be used simultaneously (Hampel and Stickler, 2012; Lewis and Youngs, 2011). Examples of audio-graphic conferencing technologies include Linktivity WebDemo (http://www.linktivity.com), and Lyceum, which was designed by the Media Institute in Open University, UK for educational use (Hampel, 2003). Lyceum offers a virtual classroom with the following features (Hampel, 2006:112):

1. Joint production of texts and images.

2. Online connection allows users to import text or images from the World Wide Web.

3. Texts and images can be saved.

4. Simultaneity of certain modes (e.g. audio and text chat).

5. No privileges inbuilt into software for tutors: all participants have equal rights, at least technically.

6. Existence of sub-conferences (which can be used for group work).

7. Lack of body language: consequences for turn-taking, for socialization and community building.

The use of audio-graphic conferencing in language teaching and learning has not been without problems (Beaven, 2013) including technical difficulties, reduced social context cues, and decreased spontaneity. Kenning, (2010) investigated "the distinctive and diverse characteristics of synchronous audio environments" and the implications of the use of audio conferencing in teaching and learning. She concluded "the benefits of CMC appear to have been overstated and that no general claims can be made about voice CMC"(Kenning, 2010: 3).

2.2.2.3. *Web-based learning.* Web-based learning is based on the use of online tutoring systems designed to deliver educational content to students via the Web with features for online collaboration. Online courses and programmes that incorporate such systems are often developed and implemented by academic and non-academic organisations worldwide (Fageeh and Mekheimer, 2013; Nam and Smith-Jackson, 2007). Reinders and White (2010) cited many organizational and pedagogical advantages of Web-based learning that included benefits related to authenticity, interaction, empowerment, control, non-linearity, feedback, and multimedia. Another advantage of online materials is related to independent learning.

Web-based learning gives students control over access and routes through the material (Reinders and White, 2010). The hyperlinked nature of files allows non-linear branching rather than a predetermined sequence of information provided students have skills and strategies to browse the web, and only if the quality of the links they use is significantly high (Reinders and White, 2010). Web-based learning is different from computer mediated communication as the former focuses on individual interaction with educational content, while the latter focuses on the social aspect of different computer-supported communication technologies. A detailed discussion of these opportunities and constraints is discussed later in this chapter.

2.3 Theories of learning and pedagogical perspectives

Many learning theories can be used to throw light on the way we teach and on the way we learn, and consequently the use of technology can be aligned with these different theories in flexible ways (Leong and Ismail, 2013). The online environment offers a new context for teaching. While it provides valuable opportunities, it also makes pedagogical and other demands on users (Hampel, 2004). In this regard, Hampel (2003: 34) asserted "online tuition should not be entered into lightly in the belief that it is a cheap and easy alternative" to face-to-face tuition. These environments need to be based on (a) sound pedagogical rationale, (b) lessons from past research, and (c) potential advantages and challenges of the technology used. As technologies continue to develop and impact foreign language learning, practitioners and researchers face the challenge of how to best utilize the wide range of technological tools reflecting sound pedagogical principles. Four theories are relevant: second language acquisition theories, theories of social presence, social-cues theories, and multimodality. These theories are discussed below.

2.3.1 Second language acquisition theories. SLA theories focus on the process of language acquisition and posited the development of a second language through the amount of "input," "comprehensible output," and negotiation of meaning (Hampel and Baber, 2003:172). The "input" aspect of language acquisition is often used in conjunction with Krashen (1994). "Comprehensible input" is seen as crucial for the acquisition of language. White (1987: 95) stated:

> Language acquisition is caused by learners understanding input which is slightly beyond their current stage of knowledge, by means of context and other extra-linguistic cues […] while we should not try to provide input which specifically aims at the next stage, "comprehensible" input is particularly beneficial.

This concept implies learning a second language involves hearing and understanding messages slightly beyond learners' current language level. Critical, however, is that new learners receive help from teachers and peers.

Chapelle (1998: 23) stated:

> The input that would be useful to the learner is problematic for the same reason that it is valuable: It contains linguistic forms that the learner does not know. As a consequence, the learner needs help with specifics of the input in order to comprehend it both semantically and syntactically.

In contrast, Reinders and White (2010: 64) contended the comprehensible input that occurs during interaction does not result in the development of accuracy unless it is combined with some type of attention: "in computer-mediated communication (CMC), materials and instructions have to include some direction as to what learners are expected to do and what aspects of the language they are required to us." Other researchers believe comprehensible input learners need comprehensible output to learn the target language. The "comprehensible output" that is associated with Swain, suggested that:

> The act of producing language (speaking or writing) constitutes, under certain circumstances, part of the process of second language learning' (Swain, 2005: 471). Swain (1995: 383) argues that 'young adolescent second language learners do indeed become aware of gaps in their linguistic knowledge as they produce their L2.

To practice the language at levels of their current abilities, learners need opportunities to produce output that needs to be comprehended, and therefore, valuable for acquisition. Chapelle (1998: 23) found "not all production qualifies as valuable comprehensible output." Chapelle suggested that it may be important to have an audience for one's linguistic output when producing the language so learners "attempt to use the language to construct meanings for communication rather than solely for practice (Chapelle, 1998: 23).

This is closely related to the notion of social interaction in the classroom. Pica (1987:4) argued the learning environment must provide students with opportunities to participate in meaningful social interaction with speakers of the second language for them to "discover the linguistic and sociolinguistic rules necessary for second-language comprehension and production." Opportunities for meaningful social interaction arise when learners engage with their interlocutors "in a two-way flow of communication in which each possesses something that the other wants or needs and has a right to request and a responsibility to share" (Pica, 1987: 4). This is reached when learners and their interlocutors share a need and desire for mutual understanding (Pica, 1987: 4). Mutual understanding is achieved through methods such as negotiation of meaning, interruption to make a correction, and rerouting to a new topic (Pica, 1994: 495) as well as "equivalent status." When teachers and students carry out communicative (and non-communicative) activities, they "engage in a social relationship which affords them unequal status as classroom participants, thereby inhibiting successful second-language comprehension, production, and ultimately acquisition" (Pica, 1987: 4). Pica (1994) and Coburn (2010) noted developments in SLA theories corresponded to developments in language teaching and learning as students experiencing opportunities for interaction were a key factor in successful language learning, especially from the perspective of communicative language teaching. Within the field of SLA, concepts such as "communicative competence and proficiency," and "negotiation of meaning, became commonly used with reference to communication (Thorne, 2003: 41). Similarly, Lightbown (2000: 431) stated that the SLA cannot serve as the foundation for "telling teachers what to teach or how […] many of the changes in second language teaching were compatible with SLA."

As a reaction to the behaviouristic approaches in language teaching, many authors in the field called for a complete paradigm shift away from behaviouristic pedagogical practices and towards more communicative, constructivist pedagogies. During the 1970s, the American sociologist Hymes (2001) developed dialogue about communicative competence, which refers to the importance of using utterances or sentences that are not only grammatically competent or accurate, but also appropriate in the context in which they are used. Advocates of this view in language learning did not deny the importance of cognitive and meta-cognitive dimensions of language learning, but considered knowledge of forms and their meaning, or what Chomsky (1965) termed "the linguistic competence," as one key component of "the communicative competence" Hymes (1985) concurred. This broader concept of "competence" was intended to involve "not only grammatical competence (or implicit and explicit knowledge of the rules of grammar), but also contextual or sociolinguistic competence (knowledge of the rules of language use)" (Canale and Swain, 1980: 4). Structural knowledge of the language needs to be taught, but by more emphasis on its functional dimension for learners provides them with the capacity to communicate effectively in the target language (Hymes, 1971). Widdowson (1978: 1) explained this view by using the concepts of "usage" and "appropriacy."

> We may readily acknowledge that the ability to produce sentences is a crucial one in the learning of a language. It is important to recognize, however, that it is not the only ability that learners need to acquire. Someone knowing the language knows more than how to understand, speak, read, and write sentences. He also knows how sentences are used to communicative effect.

Contemporary educators started to implement pedagogical approaches that promoted and facilitated learner centred strategies that encouraged social interaction through the integration of collaborative, interactive, task-based, project based,

authentic, and/or discovery learning (Baker, 2011). In the field of language teaching, Byram (1988: 3) proposed that:

> There is more to foreign-language teaching than the pair-work comparison of pictures or passing of messages. Effective foreign-language teaching generates an understanding of the language and its culture.

Development in SLA was also contemporary with an approach in learning theories that emphasized the social aspect of learning. Vygotsky's concept of the zone of proximal development that focused on children's learning were applied to the field of adult learners and to second language development as many researchers in these fields believed that learning occurs in a social context (Hampel and Hauck, 2004).

2.3.2. Theories of social presence. The concept of social presence has been defined in different ways in the literature (Kehrwald, 2008; Leh, 2001; Rettie, 2003; Richardson and Swan, 2003; Russo and Campbell, 2004; Stacey, 2002a). Rettie (2003) asserted that despite numerous alternative definitions of "social presence" this concept is "still unclear." The construct of social presence is used in the literature to refer to two elements: the property of a medium and its capacity to sustain communication, and the "perceptions," "behaviour," or "attitudes" of individuals who use this medium for interaction (Gunawardena, 1995, cited in Rettie, 2003: 1). This can be interpreted as "the degree to which a person is perceived as "real" in mediated communication" (Richardson and Swan, 2003: 70). The notion of social presence in this construct refers both to "user's judgement of the medium" and "user's judgement of the experience or of the other participants" (Rettie, 2003: 1).

The construct of social presence that involves the property of the medium and its capacity to sustain communication suggests that different types of communication technologies (e.g. written CMC vs. audio and video CMC) vary in their capacity to

convey verbal and non-verbal cues and information. Some of the characteristics of the medium that determine its richness and capacity to convey social presence include "speed of feedback and information transmission capacity" (Russo and Campbell, 2004: 10). Judging by this criterion, text based tools where the reader of the text cannot access non verbal emotion (Leh, 2001) are perceived by some researchers as low in social presence (Russo and Campbell, 2004).

This discussion is also associated with media richness theory. Social presence theory converges with media richness theory as both theories "lead to similar conclusions about the role of technical structures in human interaction" (Burke and Chidambaram, 2002: 93). Both theories assume that "the process and, consequently, the outcome of an interaction is determined by the interaction environment's technical characteristics" (Burke and Chidambaram, 2002: 93). This assumes a connection between what technology has to offer (or the capacity and characteristics of technology), and social interaction. Burke and Chidambaram (2002: 94) argue that in some occasions the full interactive potential of technology is not being exploited as a result of the limitations inherited by this technology. Unlike multimedia theory, social presence theory postulates that "media choice and, implicitly, consequent performance depend on the appropriateness of the match between media characteristics, including capacity and information requirements of the task."

Social presence theory suggests that a crucial element of a communication medium is its "social presence" (Richardson and Swan, 2003: 70), which depends on verbal cues and a number of non verbal cues and other information related to the actual physical presence of individuals such as physical distance, posture, direction of looking, facial expression, dress, and other cues (Liu, 2002). Social presence theory, therefore, is related to the social context of learning (De Freitas and Neumann, 2009).

Argyle and Dean (1965: 293) posited that the intimacy felt by participants in face-to-face interaction increases in proportion with a number of components including non-verbal behaviours such as eye contact (Argyle and Dean, 1965: 293).

The connection between social cues and social interaction is clear. Social presence can influence individuals' ability to build a sense of community, which is important for promoting interaction among distance learners (learner-learner interaction). People in general, and particularly students, feel intimate and share more information with each other if they feel socially present, but when there is a lack of social presence people recognize the environment as lacking of impersonality they tend to share less (Leh, 2001)

Rice (1993), as cited in Stacey (2002a) observed that social presence can be reflected if the communication involves verbal and non verbal cues. Since online environments provide less verbal and non verbal cues than face-to-face environments, the interaction in these environments is sometimes viewed as less personal and less socially emotional than in traditional environments (Liu, 2002). Some researchers found that the lack of social cues can lead to difficulties in forming social-emotional bonds among students, and consequently, affect the nature of interpersonal interaction via the medium (Kim, 2000). This influences the nature of interpersonal interactions that take place online (Walther and Tidwell, 1995). Rosell-Aguilar (2006b) studied teachers' experiences of audio-graphic conferencing, where participants could use audio, but could see each other. Specifically related to oral communication, some teachers (39%) commented on the atmosphere describing it as "cold." Some teachers who considered the medium as a cold environment referred to the lack of "paralinguistic" cues. One of the teachers who had "a very negative experience" stated that the medium was "cold, unfriendly, ineffective." Other teachers (61%) who

were more positive about the atmosphere in the environment stated that the medium was "colder than face-to-face, but not freezing" and that "you can still have a laugh." They also stated that the medium can be cold at first, but it helped them to know their students, although some commented they did not get to know their students as well as they would have face-to-face. Difficulties in forming social emotional bonds can be problematic as it can impact social interaction.

The use of webcam or video and the existence of a partner's image has the potential of reducing the problems that result from reduced social cues and, therefore, making online environments feel "less cold" since it (a) enhances the consciousness of natural communication, (b) helps in building a learning community, and consequently (c) reduces the feeling of isolation (Wang and Chen, 2007; Yamada, 2009), This entails new possibilities that are unknown in conventional face-to-face interactions (Hampel and Hauck, 2006: 8).

Difficulties in forming social-emotional bonds can have many negative consequences for learning. For example, lack of "person-to-person contact" can cause the participants in distance learning courses to feel isolated (Berge, 2002: 184; Debag and Walther, 2011). This feeling of isolation can hinder the language learning experience. Wang and Chen (2007: 3) noted that:

> Learning a second language at a distance poses a tremendous challenge to learners. Physical distance from teachers and peers coupled with possible isolation from the relevant language community makes language learning extremely difficult.

The findings and perspectives on social presence in online environments vary with some researchers stressing that instructors or moderators of online discussions and conferences should create presence and social quality (Leh, 1999, 2000). Others challenged the view that CMC is a depersonalized medium (Stacey, 2002a, b; Stacey

and Fountain, 2001). Yet other researchers stress that the issue of depersonalization in online learning can be a great advantage of the online environment as lack of visual information depersonalizes perceptions of individuals and promotes equality between participants.

2.3.3 Social cues theories. Social cues impact on social presence, but also on the smooth alternation of turns and roles between speaker and listener in a dialogue (Ten Bosch and Oostdijket et al., 2004). Specifically, in face-to-face verbal interaction, social cues are available and participants can draw on these cues to help regulate the conversation. Individuals utilize "turn-keeping and turn-yielding cues to signal their intention to keep or willingness to yield the turn" (Ten Bosch and Oostdijk et al., 2004: 563). Duncan (1972: 283) identified three turn-taking signals in face-to-face interaction: "turn-yielding signals by the speaker, attempt-suppressing signals by the speaker, and back-channel signals by the auditor." Ishi and Ishiguro et al., (2006: 1) explain these three mechanisms as follows:

> Turn-yielding cues are used by speakers to let the listener know that they have finished what they want to say and that someone else may speak […].Back-channel cues are used by listeners to indicate that they do not wish to talk even though the speaker is displaying turn-yielding cues […]. Turn-maintaining cues, in which speaking-turn claims are suppressed, are used by speakers to keep their speaking turn.

Social cues play an important role in social interaction. Social cues become an issue in online learning because the use of technology for communication reduces the availability of social cues. One area of concern for researchers is the extent to which the non-existence of social cues, especially verbal and non-verbal behaviours, impact communication that takes place through technology (Russo and Campbell, 2004). The discussion regarding social cues is grounded in the cues-filtered-out and cues-filtered-in theories. Cues-filtered-out theory focuses on the importance of verbal cues

in social interaction (Ramirez and Walther et al., 2002; Stacey, 2002a; Stacey, 2002a, b; Woods and Ebersole, 2003). This theory is based on the assumption that "we do not form impressions of others online, because the flattering effect of the medium turns our focus away from others, toward the self and the task, promoting more impersonal, hostile, and predominantly task-oriented messages" (Ramirez and Walther et al., 2002: 215).

As a consequence of the lack of social cues some participants in online discussions may experience include difficulties in interaction due to difficulties in turn-taking. Turn-taking can be defined as a set of rules that speakers adhere to with which to regulate turn-taking, i.e., who is to speak and when (Stivers et al., 2009; Sacks and Schegloff, 1974). Participants in naturally occurring conversations need to take turns because turn-taking is an essential organizational tool especially in spoken communication (Sacks and Schegloff, 1974). Failure in turn-taking can lead to problems in communication such as overlap, which occurs when more than one person talks simultaneously, or an interruption, which is generally used to refer to an initiation of some intervention by one person while another person's turn is still in progress (Schegloff, 2001). Social cues are important for successful turn-taking because they give the participants clues about when to start and finish speaking in a conversation. For example, one way that participants in a conversation indicate a finished turn is by dropping the volume (or the pitch) of their voice at the end of speech.

Like participants in face-to-face interactions, participants in online communication need to take turns. One of the main differences between communication that takes place in face-to-face setting, and that occurs online, is that some or all of the social cues that are available in the former are often missing in the

latter. For example, many CMC tools are based on text and lack both verbal and nonverbal cues, such as facial expressions and gestures (Leh, 2001). In text-based interaction the participants read each other' messages and respond to them in writing rather than verbally (Wang and Woo, 2007: 273). The result is one of the typical problems in real time text-based interaction and related to synchronization where participants' exchanges overlap (Herring, 1999: 6; O'Neill and Martin, 2003).

Overlapping exchanges due to difficulties in turn-taking can also happen in online oral communication despite the fact that this communication provides participants with verbal cues (but not non verbal ones as participants can talk to each other but cannot see each other). In a typical scenario, more than one participant starts to speak after the interlocutor has finished. Hampel (2003) investigated the perceptions of 6 teachers and 12 students and their experiences of teaching and learning with audio-graphic conferencing in an advanced language teaching course. The audio-graphic application was used to develop students' communicative skills. Both students and teachers commented on the lack of body language and its effect on interaction. One of these consequences was related to difficulties in turn-taking:

> Although a button for raising one's hand makes turn-taking in Lyceum relatively easy, online discussions can still seem less spontaneous as no visual signals are available to help when more than one person wishes to speak. If students forget to use the hands-up button, this can result in several users starting to speak simultaneously and then stopping altogether as soon as they realize this. The result can be awkward silences (Hampel, 2003: 30).

Other problems that result from reduced social cues are related to impression and perception formation. In a live classroom, body language and non-verbal expressions are often teachers' vital clues to recognizing difficulties students may have with understanding or engagement in the lesson. Non-verbal social cues facilitate individual's interpretation of the message since such cues provide them with

extra information that can be added to the verbal interaction for understanding. In this regard (Liu, 2002) confirmed:

> ...nonverbal cues not only regulate social interaction, but also supply valuable information about the communicators. This kind of information is very helpful in forming impressions, assessing the ways the participants understand and reply to messages, and determining the truthfulness of the participants' communication (Liu, 2002: 2).

Lack of facial expressions and gestures, therefore, can have negative consequences on the clarity of exchanged message and information in an online meeting. Reduced social cues in text-based interaction can present a disadvantage for the participants in online discussions. "Although a number of emoticons [such as ☺ ;)] can be used to enhance body language, they are not equivalent to lifelike human gestures and are therefore insufficient to truly emulate human expressions" (Wang and Woo, 2007: 273).

The discussion regarding social cues is grounded in the cues-filtered-out theory. Cues-filtered-out theory has been criticized on the basis that it "failed to consider the active role of individuals in the communication process, much less information seeking, opting instead to emphasize channel effects" (Ramirez and Walther et al., 2002: 215). More positive approaches, such as social information processing (SIP) or "Cues-filtered-In" theory, acknowledges such "information seeking behaviour" and the ability of individuals to compensate for the lack of social cues. These approaches acknowledge the active role of participants in online interactions and their capability of creating social relationships and personal impressions in "reduced cues" environments (Ramirez and Walther, et al., 2002: 215). These approaches posit that "communicators are just as motivated to reduce interpersonal uncertainty, form impressions, and develop affinity in on-line settings as they are in other settings" (Walther and Parks,2002: 535). Participants in online

interactions compensate for the lack of nonverbal cues and exchange social information by using alternate methods available through CMC, and "through the content, style, and timing of verbal messages on-line" (Walther and Parks, 2002: 10). Participants in CMC format of interaction can become even more socially oriented than in face-to-face contexts. As Walther (1996: 3) argued "media sometimes facilitate communication that surpasses normal interpersonal level."

Although this view of online interactions is more positive than the view suggested by the cues-filtered out theory, Walther and Parks (2002) acknowledge that online communication has the disadvantage that "the rate of information exchange is slower online, not only because both instrumental and relational information must be conveyed in a limited bandwidth, but because typing and reading are slower than speaking, looking, and listening" (Walther and Parks, 2002: 535).

Gunawardena (1995:147) accepted that CMC offered fewer social context cues, but nonetheless enabled interactions between participants, and an ensuing sense of community. Gunawardena 's (1995) argument was in relation to learning where much of the interaction took place online via text based communication. Her argument remains important as, notwithstanding recent advances in communication technologies and the integration of voice and video , asynchronous (text-based) communication is still the most usual means of mediating teaching and learning with technology (see for example, Lucas, Gunawardena, and Moreira, 2014). Muilenburg and Berge (2005) conducted a study about barriers to online learning and found that the collective perspective of students pointed to a lack of social interaction as one of the major barriers (Muilenburg and Berge, 2005: 47). Results showed there is a strong relationship between social interaction and learning enjoyment, effectiveness of learning, and the possibility of repeating the experience of taking an online course

*(*Muilenburg and Berge, 2005: 47). The authors concluded that improving social interaction in online learning would positively impact these factors and encourage students to take another online class (Muilenburg and Berge, 2005: 47).

The impetus falls upon the moderators of computer conferences to create a sense of online community to promote interaction and collaborative learning (O'Dowd, 2015). The findings from many studies support this claim by demonstrating that CMC users adapt to the medium in spite of the absence of social cues. Participants in online discussions are able to overcome these problems and develop friendship, rapport, and a sense of community. Leh (1999) conducted a study to examine the use of CMC (emails) in language teaching. The participants were students in the US learning Spanish via email for 10 weeks and supported by teachers in Mexico. Findings revealed that "although the participants lacked social cues, such as gestures, they developed an on-line community for communication" (Leh, 1999:12). Powers and Mitchell (1997) in a study of student perceptions and use of online discussions found that students were able to support each other as "a definitive community of learners emerged despite the distance of the learners and the lack of face-to-face contact." Enhanced levels of rapport were possible because individuals had time to read and reflect on the written messages and responses and remove any aggressive comments (Wang and Woo, 2007).

Leh's (1999, 2001) review of previous studies on the use of CMC (e.g. Abrams 2006; Rice and Love, 1987; Rosell-Aguilar, 2006b) showed that online discussions have the potential to enhance relationships among students who developed friendship and warm relationships over time. In the same vein, Abrams (2006b:198) established that CMC increases students' (a) opportunities and abilities to interact, (b) use the second language creatively, and (c) build an "interactional

community that facilitates a free flow of ideas in a nonthreatening learning context." Researchers that focused on the use of audio-graphic conferencing in language learning also reported that participants in such environments can collaborate and develop relationships (Dabaj and Walther, 2011; Rosell-Aguilar, 2006b;

2.3.4. Multimodality. Recent development in technology has involved synchronous applications that provide real time interactions to support the development of speaking and listening skills (Chen and Yang, 2014; Hauck and Haezewindt, 1999; Shi and Bonk et al. 2008). One of these tools is audio-graphic conferencing that allows for multiple formats of interaction: audio, video, text, and graphics, i.e., a multimodal networked environment (Ciekanski and Chanier, 2008; De Freitas and Neumann, 2009; Hampel, 2003; Hampel, 2006; Hampel and Hauck, 2006). These modes of communication are semiotic resources that people use to construct their discourse (Ciekanski and Chanier, 2008). "Whether the communication be textual, spoken, graphic, iconic, or spatial, each mode offers many venues for sharing information" (Ciekanski, and Chanier, 2008:166). The authors attach one or more modality to each of these modes of communication. For instance, the written mode of communication is achieved within a number of modalities such as text chat, word processor, or whiteboard with textbox features (Table 2).

Table 2. Correspondence between modes/modalities in a synchronous environment. Source: Ciekanski and Chanier, 2008:167.

Modes	Modalities
Textual	Chat, word processor, conceptual map, whiteboard
Speech	Audio
Graphic	Conceptual map, whiteboard
Iconic	Vote, in/out, away for a moment, raising hand, taking of the flow

Spatial	Movement (room+document)

This combination of communication modes gives participants the opportunity to choose from a larger semi linguistic repertoire of particular interest in language learning where all four language skills are being taught. This has created an opportunity for new pedagogic scenarios designed to enhance collaboration in multimodal environments (Hauck and Haezewindt, 1999). The concept of multimodality has been widely used to contribute to a better understanding of multimodal environments (Berglund, 2009; Ciekanski and Chanier, 2008; De Freitas and Neumann, 2009; Hauck and Haezewindt, 1999; Hampel, 2003). Users of multimodal environments can operate within this environment by using different modes of communication.

2.5 Approaches of language learning

In the literature of language learning and computer technology, there are two major learning theories that inform thinking about the use of computer technology in language teaching and learning: behaviourism, and constructivism. In the behaviourist view, learning takes place through the process of maintaining a specific response by reinforcement (Brown, 1994). A more cognitive oriented perspective on language learning started to gain popularity as the behaviouristic approach was criticised, especially in the field of language learning, for missing two important elements required for language acquisition: lively communication, and the cognitive dimension required for acquiring higher-order skills (Breen and Candlin, 1980; Hymes, 1981; Richards and Rodgers, 1986; Widdowson, 1978). The cognitive view was, in turn, critiqued by the socio-cognitive for lacking a social dimension.

The main difference between cognitive and socio-cognitive approaches is that cognitive approaches posit that "cognition occurs in the head," and therefore, "focus on the individual within the group," while socio-cognitive approaches stress "the socially and culturally situated context of cognition" (Duffy and Cunningham, 1996:196) where "learning occurs as people participate in shared endeavours with others" (Felix, 2005a; Rogoff's, 1994: 209; cited in Duffy and Cunningham, 1996: 197).

2.4.1 Behaviouristic approaches. Behaviourists examine language as an essential part of total human behaviour (Brown, 1994). One of the essential tenets of behaviourism was that learning involved a direct relationship between stimuli and responses. Accordingly, learning occurs "when learners evidence the appropriate response to particular stimuli" (Smith and Ragan, 1999: 19). Thorndike was the first behaviourist who studied the relationship between certain behaviours and the responses or consequences to those behaviours (McDonough, 1981). Later, Skinner (1957) constructed one of the well-known models of linguistic behaviour, operant conditioning, which referred to maintaining a specific response by reinforcement (Brown, 1994). Skinner's operant conditioning posited a connection between stimuli and response that can be developed through providing learners with appropriate reinforcement when they give an appropriate response to a particular stimulus (Smith and Ragan, 1999: 19). Brown (1994: 22) described how Skinner's behavioural views impacted language learning as follows:

> The behaviouristic approach focuses on the immediately perceptible aspects of linguistic behaviour –the publicly observable responses- and the relationships or associations between those responses and events in the world surrounding them. A behaviourist might consider effective language behaviour to be the production of correct responses to stimuli. If a particular response is reinforced, it then becomes habitual, or conditioned …one learns to

> comprehend an utterance by reacting appropriately to it and by being reinforced for that reaction.

This view is based on the didactic (or transmission) principle that learning takes place through mechanisms such as conditioning, repetition, and memorization and which aims to help students master the information transmitted to them about the target language. This information needs to be transmitted to students by an expert:

> The didactic perspective is based on the transmission of information by a subject expert through what Mayes and de Freitas (2004, P15) call "compelling explanations". This can be summed up by the professor who says to the students, "My job is to teach; yours is to learn". The learner's task is to understand and memorize the expert's knowledge and to learn by example Bates (2008: 224).

These behavioural views influenced foreign language teaching approaches in the 20th century for several decades and were manifested in classroom practices that focused on controlled practice and pattern reinforcement. Audio lingualism, for example, was a language teaching method based heavily on behaviourist theories of learning (Harmer, 1998). This method was also influenced by structured linguistics. This school of thought that dominated in the first half of the 20th century (Smith and Ragan, 1999) adapted Skinner's elements of stimulus, response, and reinforcement (McDonough, 1981).

Behaviourists viewed language learning as a process of habit formation. Teachers' and learners' roles are closely linked to this view of language learning. These approaches viewed the teacher as a source of knowledge and direction. Richards and Rodgers (1998: 56) explained:

> The teacher's role is central and active; it is a teacher-dominated method. The teacher models the target language, controls the direction and pace of learning, and monitors and corrects the learners' performance. The teacher must keep the learners attentive by varying drills and tasks and choosing relevant situations to practice structures. Language learning is seen to result from active verbal interaction between the teacher and the learners. Failure to learn results only from the improper application of the method, for example, from

> the teacher not providing sufficient practice or from the learner not memorizing the essential patterns and structures.

Learners' roles are seen in the same light. Learners are seen as "stimulus-response mechanisms" whose learning occurs as "a direct result of repetitive practice" (Richards and Rodgers, 1998: 23). Richards and Rodgers (1998: 56) explained this very limited role as follows:

> Learners are viewed as organisms that can be directed by skilled training techniques to produce correct responses. In accordance with behaviourist learning theory, teaching focuses on the external manifestations of learning rather than on the internal processes. Learners play a reactive role by responding to stimuli, and thus have little control over the content, pace, or style of learning. They are not encouraged to initiate interaction, because this may lead to mistakes (Richards and Rodgers, 1998: 56).

Behaviourism was later criticized by constructivist approaches. In these approaches, it was posited that learning is not restricted to passive reception of knowledge and to drill-and-practice activities. Rather, learning draws on prior knowledge and experience and on social interaction and takes place through active construction of meaning and knowledge (Murphy, 2000: 27). However, the behaviouristic views provided models for Computer-Assisted Language Learning (CALL) in the early stages of the use of computers in language teaching and learning between the 1960s and 1970s. Phases and approaches of CALL that are based on a structural view of language were given different names in the literature including Restricted CALL (Bax, 2003), Structural CALL (Warschauer, 2000), and Behaviouristic CALL (Warschauer and Healey, 1998). Early stages in the use of computers in language teaching and learning in the 1960s and 1970s were classified by Warschauer (1996a) and Warschauer and Healey (1998) as behaviouristic, based on the underlying pedagogical approaches as well as on the kind of computer technology used. CALL was rarely integrated successfully into the syllabus but was used in an ad hoc manner by isolated pioneers , e.g. through the use of specialist computer labs (Bax, 2003). Bax (2003) criticised this situation and called for a higher level of integration or what he calls 'normalization', where CALL moves from being a peripheral activity to become a widely adopted practice. When integrated technology becomes visible in every classroom, on every desk, and in every bag, but

when it is invisible, in the sense of unrecognized as special or out of the normal. Bax (2003) calls this 'Integrated CALL'

Most programmes that were based on behaviouristic CALL consisted of traditional drill-and-practice materials. Programmes were designed to provide students with "immediate positive or negative feedback" on the accuracy of their input (Warschauer, 2000). Drill-and-practice-based programmes "evolved from Skinner's (1968) mechanical programmed instruction teaching machines" (Niederhauser and Stoddart, 200:18) where the computer provided stimulus and the student provided a response. This strategy was also consistent with structuralist philosophy that stressed that "repeated drilling on the same material was beneficial or even essential for learning" (Warschauer, 2000: 8). The computer was perceived as "a mechanical tutor which never grew tired or judgmental and allowed students to work at an individual pace" (Warschauer and Healy, 1998: 57). The computer was used as a supplemental teacher for:

> Hierarchically structuring a sequence of activities and managing the stimulus/response/ feedback loop that constitutes the behavioural conditioning process. The computer displays a problem for the student (stimulus) who, in turn, responds with an answer (response). The computer then provides feedback to the student regarding whether he or she has provided the right answer (reinforcement). (Niederhauser and Stoddard, 2001:18)

In line with this view, computers or computer programs were seen as a substitute for the teacher in the sense that they provided students with integrated teaching conditions similar to what teachers could do in the classroom. Computers, provided (a) realistic, native-speaker models of the language in a variety of media, (b) offered a language learning curriculum, (c) did a needs assessment, (d) determined the best next step for the learner and provided practice with that skill area, and (e)

recorded what the student did along with evaluation record keeping, though not as extensive as that of more expensive systems (Warschauer and Healey, 2009: 58).

To take full advantage of what automation can offer, Web-based language learning materials should provide enhanced (personalised) feedback that includes hints and graphics (Felix, 2005a: 94) as well as games (Felix, 2003b:181). These features, according Felix, can facilitate "better pedagogical practice in automated online feedback."

2.4.2 Constructivist approaches (socio-cultural theories and constructivism). Constructivism serves as an arching framework for a wide variety of views (Duffy and Cunningham, 1996:197). The discussion below contains individual cognitive and socio-cognitive views of learning, and how these theoretical approaches influenced foreign language learning. As discussed before, some view language learning as a sequence of stimulus-response patterns. Finocchiaro and Brumfit (1983: 9) described Skinner's view of the nature of learning, which was strongly attacked by Chomsky who advocated an alternative learning theory based on the study of syntax (Chomsky's Syntactic Structures, 1957):

> Chomsky ridiculed Skinner for claiming that utterances can be seen as learned responses to stimuli. We do not say things to people because of past reward. On the other hand…language is not entirely stimulus-free; a large proportion of what we say depends on features of the situation, particularly the social situation, and the knowledge each conversation partner attributes to the other. However, no S-R mechanism can represent these complexities (Finocchiaro and Brumfit, 1983: 9).

Chomsky attacked some behaviouristic concepts such as reinforcement, generalisation, strength and so on claiming that these terms could probably refer to a specific meaning in the animal laboratory but were not generalised to the complexities of language (McDonough, 1981). Chomsky (1965) advocated that "language acquisition is innately determined, that we are born with a built-in device of some

kind that predisposes us to language acquisition - to a systematic perception of language around us, resulting in the construction of an internalized system of language" (Brown, 1994: 25). In other words, learning a language is not a process of habit formation but rather "an individual psycholinguistic act [where*]* language learners construct a mental model of a language system, based on […] innate cognitive knowledge in interaction with comprehensible meaningful language" Warschauer and Meskill (2000: 304). From a cognitive perspective, then, there are certain "processes, structures, and representations, that are hypothesized to operate within the learner" (Smith and Ragan, 1999: 20) and which provide a connection between instruction and learning. This argument seems to be in line with Littlewood's (1981: 92) argument that" whatever the teacher does to influence the course of development, the learner will attempt to follow a sequence of learning determined by his own natural processes."

This concept contrasts and conflicts with transmission of knowledge in conventional approaches in the sense that "the learner is viewed as constructing meaning from instruction, rather than being recipient of meaning residing alone within the instruction" (Smith and Ragan, 1999: 20). When planning the learning process, therefore, the attention is given to the learner's prior knowledge and the organisation of that knowledge (Smith and Ragan, 1999: 22). Learners should take an active, rather than passive, role in the learning process (Smith and Ragan, 1999). The learner is a meaning maker, and the emphasis in cognitive constructivist approaches, then, is on construction of knowledge:

> Constructivist learning occurs when learners actively create their own knowledge by trying to make sense out of material that is presented to them. For example, in reading a textbook lesson on the formation of lightening, a constructivist learner attempts to build a mental model of the cause-and-effect system for lightening formation. (Mayer, 1999: 143)

Although Chomsky did not offer a pedagogy for teaching, many educators and course designers used their understanding of Chomsky's concepts of learning in education tried to apply their understanding of Chomsky's concepts in teaching in education by establishing a teaching approach which is built on their understanding of Chomsky's concepts. Teachers are seen as facilitators of the learning process Littlewood (1981) uses the concept of the teacher as "facilitator of learning" to describe this new role of the teacher where he performs a number of specific roles, only one of which involves the teacher as dominator of the classroom interaction. Littlewood (1981) stated that the teacher tries to provide the type of stimulus and experiences that seem to support the internal processes described above, rather than try to have consistent direct control over them by evaluating all learners' performance according to clearly defined criteria. Therefore, errors made by learners are seen from the cognitive perspective:

> Not as bad habits to be avoided but as natural by-products of a creative learning process that involves role simplification, generalisations, transfer, and other cognitive strategies. Learners output (i.e. what they say or write) is beneficial principally to the context that it helps make input (i.e. what they hear or read) more comprehensible or salient so that the learners can construct their own cognitive models of the language. (Warschauer and Meskill, 2000: 304)

The implementation of some cognitive principles, however, became controversial when the interest in social constructivist theories and perspectives increased. The main difference between cognitive and socio-cognitive approaches is that:

> While cognitive and radical constructivists situate learning within the mind of the individual learner, sociocultural constructivists shift the emphasis from the mind to the historically specific and culturally situated context of learning. Sociocultural constructivism posits culture as the context placing constraints on what it is viable for the individual learner to know. (Shutkin, 2004: 71)

According to these criteria, the main difference between cognitive and sociocognitive approaches is that the former focused on the individual while the latter

emphasized the social dimension of learning. Sociocognitive approaches posit that learning in a social context provides students "a context and stimulus for thought construction and learning [where] the group contributes more to each learners understanding than they are able to do individually" (Stacey, 2002a: 289). Socio-cognitive approaches called for the re-conceptualization of the construction of knowledge as a social experience where learners formulated their thoughts by sharing them with others. Social constructivism stresses that "learning occurs in a social context," a view based on the belief that "human mental functioning [is] socially situated" (Hampel, 2006: 110). Socially constructed learning environments, therefore, are seen as key for "effective learning" (Stacey, 2002a: 289). From a socio-cultural perspective, learning occurs "in interaction" (Hampel, 2006: 109), where:

> Participants co-construct the "activity" they engage in when performing a task, in accordance with their own socio-history and locally determined goals, and that, therefore, it is difficult to make reliable predictions regarding the kinds of language use and opportunities for learning that will arise. (Ellis, 2000:193)

Constructivists advocate student centred strategies such as collaborative learning where students share information and construct new knowledge, requiring a high degree of interaction (Curtis et al., 200: 22; Leong and Ismail, 2013). In addition, constructivism highlights the importance of concepts such as "the provision of dialogue within a community of learners" (Stacey, 2002a: 289), the "cooperative and collaborative learning" (Sims, 2003), "learner centred context" (Anderson, 2008: 47), "role of interaction" (Anderson, 2008: 54), "scaffolding" (Ellis, 2000:193), learner autonomy, and engaging students in authentic activities. One of the essential elements for learning, then, is collaboration with other learners (Curtis et al., 2001; Hampel, 2004). Curtis et al. (2001: 22) found collaborative learning is one of the strategies that can be used to "implement high levels of interaction among students,

and thereby to increase both the quality of students' learning experiences and the efficiency of delivery…." Researchers started to advocate tasks related to collaborative learning theory, which "relies on participants sharing information, insight, personal experience, and perspectives with the hope of gaining appreciation and understanding of other views and potentially creating new knowledge" (McDonald, 2002:13). "Sustained interaction" is essential for reaching this goal (McDonald, 2002:13). Collaborative learning theory emphasizes the elements of social interaction and knowledge construction.

In this theory, the role of the teacher in online learning is to encourage collaboration where students are given the opportunity to question information, process and construct knowledge, and exchange suggestions about how to apply knowledge. This constructivist role of the teacher can be achieved through implementing learner-centred strategies. One way to achieve this in the online environment is by conducting online discussion among students using both synchronous and asynchronous tools.

A strong emphasis on socially mediated discussion (Morrison, 2008) and the social nature of knowledge led to "the creation of teaching communities" (Sims, 2003) or communities of practice (Wenger, 1998). Stacey (2002a: 289) declared "the provision of dialogue within a community of learners [is] of major importance as knowledge construction is perceived as a dialectic process in which individuals test their constructed views on others and negotiate their ideas." The community of practice (or inquiry) model "is based on the notion that interaction is central to the effectiveness of education" (De Freitas and Neumann, 2009). Learning is seen as "a social and dialogical process in which communities of practitioners socially negotiate the meaning of phenomenon" (Jonassen and Davidson et al., 1995: 9 as cited in

Morrison, 2008). "Through group learning participants have frequent opportunities to create thoughts, share those thoughts with others, and hear others' reactions" (McDonald, 2002:13).

The social aspect of learning is based on a reading of Vygotsky's philosophy of learning through social interaction where learners voice their experiences and formulate their thoughts by sharing with other learners (Vygotsky, 1978). Vygotsky (1978: 86) proposed the "zone of proximal development" (ZPD) to refer to "the type of problem solving cognitions which are not possible for a learner independently but can be generated with the assistance (scaffolding) of a teacher or more knowledgeable peer" (Smith and Ragan, 1999: 23). Vygotsky suggested that children learn by progressing through successive "zones of proximal development" by interaction with a teacher or more advanced students (Lantolf, 2000:17; Hampel and Baber, 2003; Hampel, 2004).

In the field of language learning Warschauer and Meskill (2000: 305) suggested that, according to socio-cognitive approaches: "Learning a language is viewed as a process of apprenticeship or socialization into particular discourse communities" (Warschauer and Meskill, 2000: 305). Pica et al. (1993) found that convergent tasks in which learners must exchange information, produce language, and engage in collaborative negotiation of meaning acquire "efficient language learning through the participants noticing new words or language forms" (Coburn, 2010: 5).

This learning mode is made possible in distance learning with the use of technology that "supports social negotiation of ideas, providing multiple perspectives on any given topic and access to a vast array of information" (McDonald, 2002:13). CMC provides for human communication and socially mediated discussion (Morrison,

2008) that required the use of a theoretical framework that accommodated the interactive social aspect of the online environment (Hampel and Baber, 2003). Wilson and Stacey (2004: 33) referred to the contribution of socio-cultural theory to understanding the implementation of CMC in education. The authors argued that:

> The revival of interest in Vygotskian social constructivism as an explanatory theory for the effectiveness of online learning claims interactive learning, as achieved by the process of communicating electronically, enables the learners to actively construct their own perspectives which they can communicate to a small group.

In summary, new opportunities for online learning need to draw on the principles of constructivism.

Traditional approaches have been replaced by new pedagogical principles based on cognitive approaches that require a change in teachers' and students' roles where "knowledge construction replaces the earlier emphasis on knowledge transmission and reproduction" (Murphy, 2000: 27). A shift towards implementing programmes that were more in line with the constructivist approaches occurred (Leong and Ismail, 2013). Phases of CALL based on cognitive and socio cognitive views of language learning include Communicative CALL and integrative CALL (Warschauer, 2000). Later, Bax (2003) used theory of learning as one of the key dimensions to provide an alternative analysis of CALL approaches: open CALL, and Integrated CALL.

Niederhauser and Stoddart (2001: 18) summarized some of the characteristics of computer software programmes based on constructivist philosophy

> Computer software based on constructivist principles provides students with the experiences that allow them to discover or re-invent concepts. Students are given access to a variety of open-ended applications that they use to help construct more complex understandings.

The shift in learning theories was in parallel with a shift in language teaching and learning in both face-to-face and online contexts. Constructivist implementation of computer technology was influenced by two main approaches: cognitive, and socio-cultural. Cognitively-influenced CALL allowed for the use of computer technology in a way that "allow[ed] learners maximum opportunity to be engaged with language in meaningful contexts and to construct their own understanding of the system" *(*Warschauer and Meskill, 2000: 304). These cognitive approaches advocated student centred philosophies where students were viewed as active participants in their learning and as decision makers. There was a shift in interest to implementing technology in a way that helped students achieve this goal with the use of technology:

> Helping students to use the computer as a tool to collect and organize data, and then present what has been learned. The learner acts as an active seeker of information who revises and updates his or her knowledge through the process of gathering new information (Niederhauser and Stoddart, 2001:18).

Technologies that supported this cognitive principle to language learning included text-reconstruction programmes that allowed students, working alone or in groups, to reorganize words and texts to discover language patterns and meaning. Concordances and (multimedia) simulation software allowed students, working in pairs or groups, to participate in simulated discussions and discovery (Warschauer and Meskill, 2000: 304; Warschauer and Healy, 1998: 57). Warschauer and Healy (1998: 57) found communicative computer-assisted language learning corresponded to these cognitive principles as learning became "a process of discovery, expression, and development." Proponents of this approach argued that the focus in this phase of CALL was more on what students did with each other while working together with the machine than on what they did with the machine:

> Proponents of communicative CALL stressed that computer-based activities should focus more on using forms than on the forms themselves, teach

> grammar implicitly rather than explicitly, allow and encourage students to generate original utterances rather than just manipulate prefabricated language, and use the target language predominantly or even exclusively. (Jones & Fortescue, 1987; Phillips, 1987; Underwood, 1984); Warschauer and Healy, 1998: 57)

The view that learning occurs in a social context and that interaction should take place in a meaningful context (one of the main principles of socio cultural theory) affected use of computers in language learning. Communicative language teaching theory and practice were seen from a new perspective: a social or socio-cognitive perspective rather than from a cognitive perspective. A new stage of using computers in language learning (CALL) emerged in the late 1980s and early 1990s (Warschauer and Healy, 1998). This stage of the implementation of computers in language teaching was characterized by a move away from "a cognitive view of communicative teaching to a more social or socio-cognitive view, which placed greater emphasis on language use in authentic social contexts" (Warschauer and Healy, 1998: 58). The role of the computer was less to do with providing "language input and analytic and inferential tasks" and more with providing "alternative contexts for social interaction; to existing discourse communities and the creation of new ones" (Warschauer and Kem, 2000:13).

The development in technology and the use of the Internet and multimedia-networked computers created possibilities for implementing perspectives of this type of computer technology though the use of several "informational, communicative, and publishing tools (Warschauer and Healy, 1998: 58). This supported the new rationale of using computer technology in language learning. The match between the Internet and the principles of socio-cognitive approaches was discussed by Warschauer and Meskill (2000: 305) who argued that:

> The Internet is a powerful tool for assisting a sociocognitive approach to language learning, and it is in fact this fit of the Internet with a sociocognitive approach that largely accounts for the new-found enthusiasm for using computers in the language classroom. The Internet is a vast interactive medium that can be used in a myriad of ways.

The capacity of the Web for a wide range of presentation and a variety of content has the potential to allow for individualization in learning and promote different learning styles and learning strategies, which agrees with the principles of constructivism. Warschauer (1997: 474) asserted that computer-mediated communication discussions promote a constructivist approach and collaborative learning as students can use these discussions to collaborate and construct knowledge together and break the initiation-response feedback pattern of interaction that characterizes a teacher centred classroom.

Computer-mediated communication allows communication between individuals in one-to-one, one-to-many and many-to-many forms, allowing students and teachers to exchange messages with a partner class, a small group, and even with thousands of people in international discussions (Berge and Collins, 1995). This agrees with the principle that learning should occur in a meaningful context and learners need to develop knowledge in the real world. In addition, many CALL programmes aim to create a meaningful context for interaction by providing learners with "opportunities for language use through email or chat communication, or through language exchanges between learners (where a learner with a specific L1 is partnered with someone who wants to learn that language as a second language)" (Reinders and White, 2010: 64). This type of learning is generally referred to as tandem learning (Brammerts, 1996; O'Rourke, 2005, 2007; Ushioda, 2000; Wooding, 1997).

Tandem learning takes place when two learners of different native languages work together to learn their partner's language, and also learn more about his or her background. This learning is described as "autonomous, cooperative, and

intercultural" (Brammerts, 1996: 121) and as a "very powerful use of computer-mediated communication (CMC) in second-language pedagogy" (O'Rourke, 2005: 433). This relatively new type of learning "offers the benefits of authentic, culturally grounded interaction, while also promoting a pedagogical focus among participants" (O'Rourke, 2005: 433). Herrington et al. (2003: 1) explained how providing students with opportunities for meaningful interaction and authentic communication is beneficial for students' learning:

> The use of authentic activities within online learning environments has been shown to have many benefits for learners in online units and courses. Instead of providing academic, decontextualised exercises that can be used primarily to practice a skill, there are many instances of courses where authentic tasks create the core of the online learning environment, and the completion of the tasks effectively comprises the entire student commitment for the course. (Herrington et al., 2003:1)

Benefits for such type of learning were also reported in the literature. Sanaoui and Lapkin (1992), as cited in Stepp-Greany (2002) found that the use of email exchanges between native and non-native speakers in a project that focused on French as a foreign language promoted "increased responsibility" on the part of students for their learning and widened their cultural awareness. This approach to learning contrasted with previous approaches, namely, behaviourist and cognitive approaches. More recently, the term 'tandem learning' was replaced by the term Online Interaction and Exchange or OIE (O'Dowd, 2013), and by the more generic term telecollaboration. These essentially refer to 'virtual intercultural interaction and exchange projects between classes of learners in geographically distant locations (O'Dowd, 2013:1). Research has confirmed the value of telecollaboration and its contribution to students' foreign language, intercultural and electronic competences (O'Dowd, 2013,2015; Helm, 2015) based on 'supporting collaborative learning and developing intercultural awareness' (O'Dowd, 2015:194). Helm further sees

telecollaboration as leading to 'increased motivation and linguistic output, gains in language development, accuracy and fluency, intercultural communicative competence, pragmatic competence, learner autonomy, online literacies, and multimodal communicative competence' (Helm, 2015: 198).

Many European and international projects have tried to focus on direct interaction and collaboration between students. These include the European Commission funded project, INTENT (Integrating Telecollaborative Networks into Foreign Language Higher Education) which was aimed specifically at foreign language teachers and learners at university level (Guth and Helm et al,2014), and which included participating institutions from a number of European countries (such as Spain, France Uk, Italy, etc. ; and the COIL (Collaborative Online International Learning) project (Guth, 2013;), which involved secondary school from different geographical locations across the globe. Smaller projects include the implementation of a pilot virtual learning environment designed for language teachers for the language centre at the University of Warwick (MacKinnon, 2013a; 2015). The project stemmed from the goal of connecting teachers and learners together online in order to satisfy students' needs for greater support beyond the classroom especially where class contact time was limited. These kinds of initiatives are often a learning experience for the teachers as well (e.g.Guth, 2013), requiring a community of practice approach, or what Mackinnon calls the ‘connected educator’ phenomenon (MacKinnon, 2013b:12), to enable teachers to learn from each other and experience for themselves what is like to be a student who is learning a foreign language (MacKinnon, 2013a; 2015).

2.5.3 Blended learning: A rationale for implementing different approaches in language learning. Throughout the history of second and foreign language teaching, there has been a continual debate about how learning occurs and what procedures people involved in the learning process should perform to facilitate this learning. Old paradigms were called into question as a result of factors such as dissatisfaction with existing methods and changes in linguistic and learning theories. As a result, reform movements were carried out where new principles of teaching foreign language were developed. Care should be taken, however, not to polarise learning theories into black and white with regard to the nature and role they play in education (Biggs, 1996; Goldman, 1989; Goodyear, 2002; Palincsar, 1998; Prawat, 1992; Prince and Felder, 2006; Reeves, 1994; Resnick, 2002). Decoo (2001) described the tendency towards polarization as "a way to structure our grip on reality" by differentiating between things merely on the basis of particular characteristics. However, language theories not only diverge, but also overlap in many ways, especially from an educational, more than philosophical, perspective (Dahl, 2003; Wild and Quinn, 1998). In this context, Dahl (2003) observed that cognitive and socio-cognitive learning theories are not mutually exclusive and suggested various ways of overcoming the differences between the two learning theories through the concepts of synthesis, grand theory, and complementarity.

In parallel with this new synthesised paradigm, there has recently been a trend towards creating a synthesis of Piaget's cognitive constructivist and Vygotsky's social constructivist theories (Dahl, 2003; Driver et al., 1994; Felix, 2005, Kupetz and Ziegenmeyer, 2005; Simina and Hamel, 2005; Tobin and Tippins, 1993). This new trend does not reflect new philosophies in learning, but is seen rather as moderate versions of both cognitive constructivism and social constructivism nested with each

other (Phillips, 1995). No one theory is comprehensive enough to sufficiently describe all aspects of learning. Similarly, no single method, or what Whitehead calls "universal panacea method" exists (Whitehead, 1996). In many cases, language teachers prefer to use an eclectic approach in their teaching (Sinclair and Renouf, 1988:142) where they employ aspects from different learning theories.

The call for incorporating different approaches, rather than relying on one approach, is further supported as these approaches focus on some aspects of learning that have been ignored in previous or undervalued approaches. For example, Chomsky advocated cognitive-code notion with its emphasis on conscious understanding of rules and consequent production of patterns rather than on unconscious learning of the patterns themselves (e.g. through reinforcement and conditioning). This notion represented a strong criticism to the habit formation principle strongly advocated by behaviourism. A more balanced view was advocated by Finocchiaro and Brumfit (1983: 9) who concluded that "both cognitive-code and habit formation theories (not one or the other) have a role to play in language acquisition and learning." The teacher should be attentive to the individual needs of language students and consequently "students should not be discouraged from thinking about the language and making use of generalizations-but equally the value of simple repetition, for many students, should not be ignored."

Another rationale for employing different approaches in language learning was advocated by Felix (2005) who suggested that the use of instructive practices that focus on drill-and-practice can not only improve student accuracy, but also free teachers' time for more constructive activities. The same argument applies to classroom interaction. Different approaches encourage different types of classroom interaction: behaviourism focuses on teacher centred interaction where knowledge is

transmitted from teacher to students while socio-cognitive approaches focus on student-student interaction where knowledge can be constructed.

Researchers argue that the use of different practices for classroom interaction can maximize learners' involvement in activities that lead to second language acquisition and help students achieve optimum learning outcomes. This is especially true if teachers, while engaged in teacher-centred activities, involve learners in classroom discourse and give them a chance to clarify and express themselves (Walsh, 2002) as well as when teachers have enough skills in managing the turn-taking structure where the discourse progresses smoothly from teacher centred to learner centred, or vice versa (Decoo, 2001). In any case, the teacher's use of language and learning activities should be in tune with their specific aims at different stages of the lesson. Walsh (2002: 5) maintained that:

> Where language use and pedagogic purpose coincide, learning opportunities are facilitated; conversely, where there is a significant deviation between language use and teaching goal at a given moment in a lesson, opportunities for learning and acquisition are, I would suggest, missed.

With activities that aim to increase speaking fluency through oral production of language, students need to be involved in contexts that require a high level of student-student interaction. Other aspects of the language such as grammar explanation, confirmation checks, and requests for clarification from the teacher might need more talk on the part of the teacher, and in these cases the focus on teacher-student interaction in the class would be more valuable (Windschitl, 2002; Ellis, 2006).

This argument also applies to contexts where technology is used in education. The three paradigms of CALL discussed in the previous sections "do not fall into neatly contained timeline" (Warschauer and Healey, 2009: 58). The beginning of

each one of these phases does not necessarily involve the end of the practices and technology that are associated with previous phases. Current teaching practices and use of computer technology tools correspond to all three phases of CALL (Warschauer and Healey, 2009: 58). "One can find constructivist approaches to teaching by video-conferencing, didactic and behaviourist use of online learning, and cognitive approaches in classroom teaching" (Bates, 2008: 244). Each of these approaches has value. Niederhauser and Stoddart (2001: 29) stated that different types of software can be used to address different educational purposes and learning goals: "Drill-and-practice and tutorial software can be effective in helping students develop specific skills. Interactive, exploratory software can support teachers as they implement reform-oriented constructivist practices" (Niederhauser and Stoddart, 2001: 29).

In sum, the successful implementation of new technology depends on the successful implementation of sound pedagogical goals rather than on the technology itself. The inherent nature of technology and the specific function a specific technology is meant to facilitate. Emails, for example, are used for writing, not for speaking; in contrast, audio conferencing is used for real time voice communication rather than for discussions that require reflection, which are usually conducted through discussion forums. Thus, certain technologies have certain properties, potentials, and constraints that make them more applicable for certain tasks than others (Koehler and Mishra et al., 2007). The following example is given by Koehler and Mishra (2009: 2)

> Using email to communicate […] affords (makes possible and supports) asynchronous communication and easy storage of exchanges. Email does not afford synchronous communication in the way that a phone call, a face-to-face conversation, or instant messaging does. Nor does email afford the

> conveyance of subtleties of tone, intent, or mood possible with face-to-face communication.

Salaberry (2001: 50) maintained that "the most important challenge posed by technology assisted language learning will be the identification of the pedagogical objective that technology based teaching is intended to fulfil." The responsibility of exploiting online environments in teaching rests on the shoulders of the teachers. For teachers to exploit the strengths and affordances a specific technology has to offer they need to know the inherent functions of the technology and use it in a way that is consistent with its function (Zhao, 2003).

2.5 Views on the opportunities and constraints of online learning

The opportunities and constraints that emerged from the literature review of online learning including learning through video and audio conferencing are cited in this section including training and development, equality in participation, student support, student characteristics, technical consideration, computer literacy, and time commitment.

2.5.1 Equality in participation and social cues. Because many students do not communicate verbally in English when it is a second language because of shyness (Hong, 2006) can have a negative impact on students' language learning experiences. Studies have shown that lack of visual information depersonalizes perceptions of individuals and reduces anxiety. Online environments provide a level of anonymity that can benefit people who are in a subordinated position. Rheingold (1993: 66) explains this as an opportunity. In the following quote Rheingold shows how this can provide an opportunity for students who may be in a subordinate position because of shyness:

> Because we cannot see one another, we are unable to form prejudices about others before we read what they have to say: race, gender, age, national origin,

> and physical appearance are not apparent unless a person wants to make such characteristics public. People who are thoughtful but who are not quick to formulate a reply often do better in CMC than face-to-face or over the telephone.

This claim is supported by many studies that demonstrated that lack of body language in online environments was factor that encouraged participation because of the sense of anonymity it offers the participant. The findings from a study by Warschauer (1996b: 7) who compared student participation in CMC and typical face-to-face discussions showed "a tendency toward more equal participation in computer mode."

Reflecting on research on computer-assisted classroom discussions, Ortega (1997: 84) reported that electronic discussions have "an equalizing effect on participation," especially in electronic discussions that take place in the L1 and L2 classroom. This advantage has been attributed partly to the degree of invisibility offered by the medium where students exhibit less inhibited behaviour and become more active in the class (Bento, R., & Schuster, C. 2003). Richardson and Swan (2003 :69) declared that "the ability of personal identities to remain concealed means that all students, regardless of race, sex, disability, or appearance are on equal ground" (Simonson and Smaldino 2000, as cited in Richardson and Swan, 2003).

Other researchers found that lack of social cues can lead to a feeling of anxiety. Hampel and Felix et al. (2005) reported on a study conducted by Hauck and Hurd of oral communication and language anxiety in online environments where it was suggested that students who study online may experience what the authors called a "loss of embodiment." Similar findings were reached by Hampel and Felix et al. (2005) who investigated students' experience with audio-graphic conferencing (Lyceum) and found that lack of body language induced a feeling of "loss of

embodiment" for some students, a feeling that appeared to have a number of negative consequences such as disorientation and anxiety. Hampel (2003: 30) also reported one of the students in a different study reported that the lack of body language "can make it more difficult for shy students to participate" (see also Dabaj and Walther, 2011).

2.5.2 Accuracy and automated interaction. With regard to the issue of automated interaction in online learning and focus on accuracy, Web-based learning systems provide automated interaction (interaction with the computer or with automated materials), but have been criticised on the basis that they do not offer opportunities for social interaction and that they are nothing more than electronic formats of traditional books. Some online language learning materials provide no more than "simple online feedback on correct and incorrect input" (Fitzpatrick, 2000:1), rather than "a platform for communication and interaction within a virtual, telecooperative classroom" (Fitzpatrick, 2000: 1). Resnick (2002: 32) claimed that:

> While the new digital technologies make a learning revolution possible, they certainly do not guarantee it. Early results are not encouraging. In most places where new technologies are being used in education today, the technologies are used simply to reinforce outmoded approaches to learning.

Some researchers claim that students' interaction with online material through the use of drill-and-practice (or automated approaches to learning) offers them an opportunity to focus on form and improve their accuracy through automatic feedback that judges students' performance and corrects errors (Felix, 2003a b, 2005; Reinders and White, 2010: 64). One of the essential advantages of automated feedback is that it is continuous, which can be difficult or impossible to provide during student-teacher interaction in a traditional classroom. Hence, Web-based learning offers an advantage over regular face-to-face settings. Felix (2003a: 151) explained:

> Computers can provide individualised feedback when it is difficult in the classroom to attend to all students equally and fairly at all times; automated feedback can be more frequent and directly linked to very small achievements; Computers will tirelessly continue to give anonymous feedback, independent of moods and personal relationships, and independent of time and place […] automated feedback can be more frequent and directly linked to very small achievements. (Felix, 2003 a: 151)

Felix indicated what computers can do for language teaching and learning in automated terms. Felix argued that online materials support interaction, and continuous feedback is of special importance to second and foreign language teaching. Felix examined the dilemmas associated with implementing social constructivism in language learning and determined that during the last few decades there has been a main shift from instructivist to constructivist approaches. Both proponents and critics of the pedagogical values of constructivist activities admit that the implementation of these activities (e.g. problem solving activities, situated learning activities, co-operative activities, etc.) involve three main challenges that cannot be ignored: (a) difficulties that may arise from poor group dynamics, (b) authentic assessment procedures are time consuming, and (c) the need for linguistic accuracy. Felix contended:

> If we are serious about achieving the best results for our students, we must be prepared to invest serious time in monitoring group dynamics, devising elaborate assessment procedures that match the processes of learning in which students are engaged, and finding ways of raising linguistic accuracy without compromising a learning climate that emphasises risk-taking while allowing students to make errors in a safe environment. (Felix, 2003b: 181)

Felix concluded that there is a need for a combination of social constructivist activities and cognitive constructivist because "the former will free up time for the latter' which will facilitate second language learning, and help students achieve high levels of fluency and accuracy." In her 2005a article, Felix revisited the same topic and reached similar conclusions.

2.5.3 Personalised feedback. To take full advantage of what automation can offer, Web-based language learning materials should provide enhanced (personalised) feedback that includes hint and graphics (Felix, 2005a: 94) as well as games (Felix, 2003b: 181). These features can facilitate "better pedagogical practice in automated online feedback." The potential of automated interaction can be exploited for developing students' accuracy and structural knowledge of the language. These programs, however, should be developed in a more sophisticated way where students are provided with more than a simple feedback structure (e.g. right/wrong feedback to answers). Felix (2003b: 181) suggested that automated activities of language learning can be "enriched and humanized" in many innovative ways. Humanising automated feedback, she explained, can be achieved through the use of:

- Feedback containing hints
- Structural hints
- Personalised hints
- Graphics as feedback device
- Structural graphics
- Personalised graphics
- Games

These features can facilitate "better pedagogical practice in automated online feedback." It is a challenge to humanize computer feedback and achieve this level of sophistication in Web-based learning (Felix, 2005a) as well as in all learning formats that require students to study independent of the teacher, such as self-access language centres (Reinders, 2006).

> The day when the web might provide an extensive and changing range of grammar exercises with helpful feedback and storage of student results, still

> less, an analysis of student weakness to allow for both appropriate and helpful feedback and for the tailoring of future work to identified needs is some way off.

Observations made later by other authors showed that the situation has not changed much since this observation was reported a few years ago. For instance, more recently, Reinder (2006: 5) stated that:

> There did […] not appear to be any recent computer programme giving access to language learning resources and taking a systematic approach to supporting students at all stages of their independent learning process. The challenge was to develop an environment that would provide support without taking away responsibility from the learners, and that would not be directive, but rather suggestive and encouraging.

The level of sophistication of feedback and support offered to students through computerized interaction should be improved (Felix, 1999). The drill-and-practice format (or the behaviouristic paradigm) is inadequate in terms of providing students with contextualized and personalized feedback and support. Felix contended there is a need to consider the use of labour-saving approaches (Felix, 2005b) where automated computerized activities are "more humanized and pedagogically sound than the traditional drill-an- practice paradigm." Humanizing automated feedback can be achieved through the use of different types of hints (e.g. structural, personal etc), through the use of graphics (structural, personalised etc), and games (Felix, 2005a). This approach needs to include (a) providing students with support, (b) explaining to students why their answers are wrong, (c) assessing students' language skills and use of remedial exercises, (d) dealing with misconceptions and errors, (e) encouraging active engagement, etc. Feedback can take different forms using one or a combination of modes like sound, movement text, forms of feedback, scaffolding, and coaching that present an advantage to what can be done in traditional learning settings (Reinders and White, 2010: 66).

2.5.4 Fluency and social interaction. Multimodal technologies have many features and characteristics that are thought to support social interaction. These features and affordances allow for "multimodal learning environments" (Hampel, 2006: 111), which enable teachers and students to use audio, video, text, and graphics in their communications with each other (Hampel, 2006; Hampel, and Hauck, 2006). These applications have created new opportunities for interaction in foreign language learning (Hartman et al., 1991; Lewis and Youngs, 2011; Manning, 1996b; Warschauer, 1996b).One of these opportunities is related to practising speaking skills. When teaching languages, it is important to give students the opportunity to communicate verbally in the target language, which helps them practice their speaking skills. The issue of catering for this communicative aspect (developing communicative listening and speaking skills in the target language) has long created challenges in the use of technology in language learning (Hampel, 2003, Felix, 2004; Chen and Wang, 2008). Chen and Wang (2008) stated that:

> Interaction, especially in the form of conversation, has long been considered crucial to L2 (Second Language) acquisition. However, the provision of interaction has also been the greatest challenge facing distance language learning. In other words, despite the availability of various educational technologies, learning to speak the target language still remains the most challenging of all the skills (e.g., reading and writing) that distance language learners must acquire (Chen and Wang, 2008: 98).

The challenges of developing speaking skills and the limited oral interaction when teaching through technology seem to be a persistent issue. Kötter and Rodine, et al. (1999, as cited in Hauck and B. Haezewindt, 1999: 47) noted that:

> A feature which is notably absent from most distance language learning settings is the option for learners to collaborate with each other outside inflexible, scheduled meeting times. While the use of telephone conferencing and e-mail addressed this problem to some extent […], there was still no affordable way for them to participate in synchronous interactions which were flexible as to time, fluency and the number and composition of participating groups.

Many methods have been experimented with to find a solution for the problem. The need for practising speaking skills was addressed in some distance institutions such as the Open University, UK, by introducing regular face-to-face tutorials for language courses (Hauck and Haezewindt 1999; Hampel, 2003). Meeting students face-to-face to allow them to interact with each other and with the tutor did not offer a convenient solution to the problem. Hampel (2003) explained "tutorial arrangements are neither flexible enough to cater for the needs of adult learners, nor do they provide students with enough exposure to the spoken language." Another way to deal with this problem involved using CD ROM and online materials that provided students with spoken language input in the form of recorded audio and video files (e.g. non-interactive listening) and elicited oral output (two elements that are important for language acquisition (Krashen, 1994; Swan, 2005). These strategies, too, did not seem to meet students' needs for "interaction and the negotiation of meaning in a communicative situation which is paramount for second language acquisition. Nor does it provide for socio-cultural learning with tutors and peers" (Hampel, 2003: 22). One problematic area for Web-based learning systems is that these systems do not have the capability to recognize verbal input and generate authentic and genuine communication with students (Forbes-Riley and Litman, 2006; Litman and Rosé et al., 2006)

More recently, the implementation of audio conferencing is seen as a potential solution for the difficulties in developing speaking skills. Audio-graphic conferencing tools are Internet based applications that include a combination of technologies that support real time voice and text-based communication over the Internet as well as the exchange of graphic information (Coburn, 2010; Hauck and Haezewindt, 1999; Hampel, 2003; Hopkins, 2011; Rosell-Aguilar, 2006b). The

Department of Languages in the Open University, UK started to offer online language teaching tutorials in February 2002 using an Internet-based audio-graphics conferencing tool called Lyceum (Hampel and Hauck, 2004). It has been argued that the use of this application has a great potential for verbal interaction in language teaching and learning.

2.5.5 Fluency in writing. Other studies focused on evaluating courses that implemented text-based CMC. The majority of these studies show that written CMC had a positive impact on student writing ability (Bartolic and Bates, 1999; Fageeh and Mekheimer, 2013). The impact of CMC, and more specifically, email exchanges, on students' writing skills has been examined, for example, by Hartman et al. (1991: 104). The researchers found that these electronic writing tools "support student efforts to become better writers by providing opportunities for practice and for receiving feedback from an audience that includes both teachers and classmates." Similar results were reached in another study by Warschauer (1996b) where the benefits of electronic communication for ESL learners were tested through a comparative study. Two forms of discussion were compared: traditional face-to-face discussion, and computer mediated discussion. Findings showed considerable differences in the two types of interaction. Warschauer argued that "electronic discussion can be a good environment for fostering use of more formal and complex language, both lexically and syntactically" (Warschauer, 1996b: 22). The findings also showed that this kind of discussion allowed students equal opportunities for participation without disadvantaging more articulate students.

Another cited advantage of written CMC is related to the text-based nature of online discussions AS desirable in language learning as they tend to be more formal and complex than oral discussions, a general feature of written communication, and

therefore "electronic discussion can be a good environment for fostering use of more formal and complex language, both lexically and syntactically" (Warschauer, 1996b: 22). Similar results were reached by Yu (2013) in a study that was conducted in a Taiwanese context. Another advantage of CMC is that students tend to produce a large amount of writing when using this medium (Kozar and Lum, 2013).

In a study that examined synchronous, written classroom interaction, Kern (1995: 475) found that "students had over twice as many turns, produced two to four times more sentences, and used a much greater variety of discourse functions" than in oral face-to-face interaction. This is seen as an advantage because "comprehensible output" is thought to be essential for second language acquisition to take place (Swain 1985). Ortega (1997: 83) indicated a similar advantage of the medium: students were able to contribute to the discussion "as much as they wanted at their own pace and leisure." Students tended to perceive the medium "as less threatening and inhibiting than oral interactions and produce a high amount of writing, with all students participating to a high degree and all producing several turns/messages per session." It is important to point out, however, that some researchers questions whether skills acquired in a written environment are transferable to oral communication, a claim that most researchers are make tentatively (Hampel and Hauck, 2004: 67).

2.5.6 Teacher support. While online materials can be accessed by students at any time and from any place, teacher support is required. Many studies show that without teacher support, students seem to be less likely to access the "anytime/anywhere" materials, or may make inadequate use of these materials. Reinders and White (2010: 62) remarked:

> Recent studies have especially shown the importance of support where learners access materials without the direct intervention of a teacher, whether in a self-access context (Reinders 2005; Ulitsky 2000), or in distance

> education (Hampel 2006; Wang 2007; White 2006). Without such support, learners tend to use fewer or inefficient learning strategies, motivation levels tend to be low, and dropout rates high.

Thornton and Houser (2005) conducted a study designed specifically to be accessed through Internet-enabled mobile phones. The program included 100-word English vocabulary lessons that were sent to students by email at timed intervals. Results suggested that the majority of students who participated never used their mobile phones to access and make use of the materials as suggested by the developers. In a study by Reinders (2006) a program was designed to support students at different stages of their self-directed language learning, and to prompt students to revise their needs analysis. Reinders found that not many students responded to computer prompts to complete the needs analysis despite that the first time students logged on to the program it defaulted to the Needs Analysis page, and despite that the teacher strongly encouraged students to complete the Needs Analysis. Prompts from the computer that reminded students of the time they spent on individual skills or reminded them of an approaching deadline to reach a certain goal level were ignored for the most part: "Very few students increased the amount of time allocated to certain skills or the total amount of self-access time after receiving such prompts." The author concluded that students should be provided with adequate training and support in using self-study material (Reinders, 2006: 235).

These findings are consistent with those reported by Huifen and Xi, et al. (2002: 217) who found that despite students' preference for Web-based learning "the current web learning patterns cannot completely replace instructor's supervision and in-person communication with students." Consequently, the author suggested that "these are ways to increase human communication and to improve the interactive functions furthermore, so as to increase the educational effectiveness: (Huifen and

Xin et al., 2002: 217). These suggestions were in parallel with those of De Freitas and Neumann (2009: 987) in which the authors stated that "the role of the tutor is still important even where learner autonomy strategies are in use." The belief that computers cannot replace teachers is further supported by Murray (2004: 82) who suggests that "machines are lacking in subtlety, they cannot satisfy social needs; people need people and learners need teachers in ways in which they do not need machines"

2.5.7. Support. In online courses, students need to be provided with adequate support to meet their online special needs. Developing requisite knowledge, skills, attributes, and competencies helps teachers not only to use the online environment appropriately, but also play a central role in providing students with different types of support such as cognitive, affective and administrative or systemic support (Baumann and Shelley et al., 2006; Bolaji and Adesina, 2013). Support provided by teachers for online learners is essential for course completion (Galusha, 1997) because distance students are likely to face difficulties and insecurities in areas such as feedback, contact with teacher, isolation, lack of experience, and need for training (Galusha, 1997).

Distance students need to be supported in developing "a sense of personal involvement" with the academic institution. Students undertaking distance learning courses who have poor study skills can be at risk of dropping out if they do not manage to develop involvement in a short time (Galusha, 1997). It is also important for teachers to have the necessary skills to "assist students to be independent learners" (Khine and Yeap et al., 2003) and to mentor all types of students including those whom the CMC environment favours such as shy, tongue tied, and not verbally proficient students. These needs should be emphasised when planning online courses

as failing to meet them can lead to student frustration (Galusha, 1997). These needs apply to students in a self-study mode of learning such as those who study on their own using automated programmes in self-access centres (Reinders, 2006) and those who study on their own using Web-based learning (Reinders and White, 2010).

2.5.8. Student characteristics and motivation. Students' personal characteristics contribute to, but may not guarantee, a successful distance course ((Park and Choi, 2009). Students who study at a distance need to be independent learners and practice learner autonomy. When students have these characteristics this presents an opportunity for online learning. The absence of these characteristics can hinder the learning experience. Students need to play an active role in the learning processes where they are expected to "function as self-motivated, self-directed, interactive, collaborative participants in their learning experiences by virtue of their physical location" (Tam, 2000: 50). "There is a consensus that the practice of learner autonomy requires insight, a positive attitude, a capacity for reflection, and a readiness to be proactive in self-management and in interaction with others" (Little, 2002: 1). The rationale for employing learner autonomy in the context of language learning was summarized by Little (2002: 2):

> Effective communication depends on a complex of procedural skills that develop only through use; and if language learning depends crucially on language use, learners who enjoy a high degree of social autonomy in their learning environment should find it easier than otherwise to master the full range of discourse roles on which effective spontaneous communication depends.

Other characteristics and skills that are central to autonomy and which lend to a successful distance learning experience include the skills of "self-management" and "self-regulation" (Hurd, 2005: 16). Students also need to be highly motivated (Carr, 2000), which strongly impacts retention and completion rates. Since distance students

are less accessible than classroom students, it can be challenging for teachers to help them to develop these skills (Hurd, 2005: 16).

Reinder (2006) suggested that self learning is not for everyone: that students need to be motivated and independent in this mode of learning, need training and support to be successful. Yang and Chen (2007) confirmed that students bring different perspectives to online language learning and that those who are passively oriented towards this type of learning need to be carefully guided towards the pedagogical practices of this approach.

2.5.9 Flexibility. Another cited advantage of the use of Web-based learning is related to the flexibility this type of learning can provide for students "independent of time and place" (Reinders and White, 2010: 62). This flexibility provides learners with a practical opportunity to use such materials outside the classroom, and presents an advantage for learners who are "otherwise unable to attend classes" Reinders and White (2010: 62). Web-based learning is similar to asynchronous modes of learning. The high degree of flexibility is seen as an advantage in distance learning because most distant students have constraints in terms of family and time. Most Web-based materials are intended for use outside the classroom (Reinders and White, 2010); although in some cases pieces of courseware are also designed to be used in classroom situations directed by a teacher (Murray, 1999).

Another challenge in the use of synchronous text based tools in teaching and learning is related to the degree of flexibility offered by synchronous interactions. In this type of interaction, students are expected to log on to the online meeting at a specific time. The fact that students in synchronous meetings need to be online at the same time limits, to a certain extent, the anytime flexibility of online learning, and presents what Hines and Pearl (2004: 34) describe as a "synchronous challenge:"

> Live chats pose a number of problems for both instructors and students. students often sign up for on-line courses because they prefer the flexibility to set their own schedule, whereas real time chats require that students sit down in front of their computers on a specific day, at a specific time allowing students to choose which chats to attend only partially addresses this concern.

Although Hines and Pearl (2004: 34) described this challenge in relation to synchronous text chat, these problems also apply to synchronous meetings through audio and audio-graphic conferencing. Because synchronous online meetings can be "captured and replayed anywhere, anytime provides enhanced flexibility for learning" (Slocum and McGill, et al.1994: 24). This is an example of a constraint turned to an opportunity.

Research studies report many advantages of asynchronous text-based discussions, such as the flexibility of this mode of learning. Written CMC discussions can take place between individuals using tools such as discussion forums, emails at the participant's convenient time, which offers an advantage especially for individuals who study and work at the same time. Participants can send and receive messages without having to be online at the same time. Thus, students can take part in online discussions at almost any time (Wang and Woo, 2007). It also offers "anywhere" flexibility as students can study "at the place of their choice (home, work or learning centre), and without face-to-face contact with a teacher" (Bates and Bates, 2005: 5). In this context, Wang and Woo (2007) examined the perceived differences between asynchronous CMC discussions and face-to-face discussions and found that convenience and time efficiency were two main opportunities of asynchronous online learning. A potential reason of this finding, according to the author, is that "all the participants attended the online tutorials from their homes, thus saving time that would have been used for travelling" (Wang and Woo, 2007: 6).

2.5.10. Time commitment. Online teaching can be overwhelming (Wallace, 2003), as it requires greater time commitment than face-to-face teaching (Berge, 2002: 184). This issue applies to distance learning in general where:

> There can be a lot of up front effort in designing distance learning material [which] can impose a burden on teachers who already have material for traditional classrooms. Computers, video equipment, communications software, and the like, present challenges and frustrations (Galusha, 1997).

In addition, the use of technologies such as discussion forum can be demanding and may impose a burden on teachers. Therefore, teachers are advised to use their time wisely (Wallace, 2003). Murray and Hourigan (2010:221) investigate the pedagogical and support role of the teacher in blog based environment and advise that "strategies to manage the administrative load are defined and set in place early on". Berge (2002:184) suggested that "additional faculty compensation" and "incentives and release time" became important factors to deal with this issue. Felix (2005) recommended employing a combination of labour-saving and labour-intensive approaches in online learning (i.e. instructive and constructivist approaches).

5.8.11. Immediacy and spontaneity in social interaction. One of the challenges of teaching and learning a foreign language with audio-graphic conferencing is the delay in the dialogue and conversation in real time interactions. As mentioned before, audio-graphic conferencing integrates synchronous tools that support real time communication and have the advantage of providing a venue for relatively "spontaneous" discussions and "talks" that cannot be achieved by using asynchronous tools (Johnson, 2006). Still, the nature of online communication lacks the immediacy of conversation that usually characterizes face-to-face interactions. Unlike face-to-face communication, interaction which takes place through technology, implies that individuals cannot directly react to what the other says as there is a

relative delay in turn-taking during the interaction. Rosell-Aguilar (2006b) conducted a study about teachers' perspectives of teaching with Lyceum. The interaction patterns in the online environment through this software were described by some of the participants as slow. A diversity of factors can lead to delay in communication as well perceptions on these issues. The results were summarised by Rosell-Aguilar (2006b: 12) as follows:

> Fifteen tutors (83%) agree that communication via Lyceum can be quite slow, two (11%) disagree and one both agrees and disagrees. Some of the delay in communication is blamed on the technical (as with slow connections there can be a time delay), others blame it on the medium itself and the fact that a button needs to be pressed to speak (similar to what Levy & Stockwell, 2006, refer to as "delayed synchronous" in reference to text chat programmes) and people cannot speak all at once, which "loses spontaneity". Silences are reported to seem longer in the online environment, but many teachers might agree that silences are common in a beginners' tutorial, so perhaps the key here is that the silences "seem" longer rather than actually being so.

As suggested in the above comment, the delay in real time interactions has undesirable consequences regarding the spontaneity of the dialogue. Because of this delay, teachers and students cannot have what Shi and Bonk et al. (2008: 4) termed "direct and timely interactions." Hence, synchronous online interactions cannot equal the spontaneity and immediacy, and the immediate interchanges, of face-to-face interaction since they offer less immediacy than the real life classroom. In this regard Haefner (2000: 15, as cited in Coghlan (2002:2) insisted that:

> Synchronous online sessions cannot equal the subtlety, the humour, the energy, and the excitement of the real life (RL, as it is known in cyber circles) classroom, but it affords more immediacy than asynchronous communication alone. Dialogue and conversation are by definition immediate interchanges, are synchronous, and since Plato dialogue and conversation has been an integral part of teaching and learning. Immediate interchanges have an energy and earnestness that can't be matched by deferred responses, delayed replies.

Some researchers argue that delay in response and reduced spontaneity can reduce students' motivation, which in turn, can have consequences on students'

participation in classroom interactions. When immediacy of communication and spontaneity of this communication are reduced in online dialogue, this may reduce the level of communication that occurs among individuals (Curtis et al., 2001). This is possibly why Haefner (2000: 15) warned that "the importance of being earnest" and the consequences of this issue on motivation are supposedly well known by teachers especially those who are "trying to energize and motivate students."

The literature on written CMC has been devoted to the implementation of the asynchronous text-based interaction tools such as online discussion forums and email (Bartolic and Bates, 1999; Baker, 2011). Text-based discussion can also be conducted in real time through synchronous tools (synchronous written CMC). In fact, synchronous text-based tools are considered more dynamic than those used for asynchronous written interaction (Coghlan, 2002; Yeh, 2014). These tools support real time interaction, and therefore provide more immediacy and a larger degree of spontaneity (Hines and Pearl, 2004: 34; Johnson, 2006) than asynchronous tools although teachers' and students' experiences of the medium show that it is not the same degree of spontaneity offered in face-to-face situations (see for example the discussion below audio and audio-graphic CMC). Real time chat rooms can be created through emails where two or more students can "talk" online and discuss various issues and topics in the target language. Pellettieri (2000: 59) claims that synchronous text chat "bears striking resemblance to oral interaction." This learning experience is believed to "stimulate authentic communication and assist students in developing specific communication skills such as arguing, persuading, or defending a particular point" (Singhal, 1997: 1).

5.5.12 Spontaneity. The asynchronous nature of some online tools such as email and discussion forums do not require "immediate spontaneity," participants in

asynchronous online discussions "might lose their enthusiasm, procrastinate and then be unable to follow the discussion thread" (Khine, Yeap, et al., 2003: 121).

2.5.13 Training and development. Language teaching in face-to face situation requires special training. The same can be said about teaching online. However, training language teachers how to teach online is considered to be an opportunity when the training is focused on how to implement constructivist activities in virtual classes. In some situations, training is focused only on how to use online environments to replicate a traditional classroom. This is considered as a constraint as it does not exploit the potential of online environments to the full.

In some situations, even when training is adequate, there are many constraints that hinder the implementation of constructivist practices in the online environments. Applying the constructivist strategies and principles in face-to-face contexts requires certain skills and competencies, but applying them in an online context where teachers and students are separated by space and sometimes by time presents additional challenges for teachers and students. These challenges apply to online learning in general, but they are "much more keenly felt by language teachers because language teaching requires constant spontaneous interaction" (Chen and Wang et al., 2008: 361).

The implementation of audio-graphic conferencing in language teaching and learning added more complexity to the learning process and made greater demands on the part of teachers and students alike (Comas-Quinn, 2011; Hampel, 2004). There was a concern that these systems would "give the academics a presentational device [which] they can all too easily make use of […] for delivering new material, rather than allowing a student-led discussion to develop" (Laurillard, 2002: 155; Leong and Ismail, 2013). When adopting audio-conferencing applications and other

communication technologies (such as instant messages tools, e-mails, chat rooms) in language teaching and learning "it is not sufficient to see the new learning spaces as replicates of conventional face-to-face settings" (Hampel and Hauck, 2006: 3).

The use of CMC systems in a constructivist rather than transmissive way requires changes in the role of the teacher as well as that of students, and in the relationship between teachers and students (Rosell-Aguilar, 2007). In this regard, Anderson (2008: 69) argued that

> Emerging best practices now recognize the flow of communication in online courses to be much less “teacher-centric” than in traditional classroom discourse; teachers do not have to respond immediately to every student question and comment, and playing a less dominant role in class discourse can actually support the emergence of greater learner commitment and participation.

For teachers to use these environments according to constructivist and socio constructivist principles, they need to transform their roles from that of transmitter of knowledge, "source of information," and from "expert" (Tam, 2000: 52) to a "guide" (Tam, 2000: 52), "mentor," "tutor," and "facilitator" of students’ learning (Helm ,2013: 42), and to be able to meet the needs of students in distance courses without face-to-face contact (Galusha, 1997). Richardson and Swan (2003: 69, as in Harasim et al, 1995, and Simonson et al., 2000) argued that:

> With the altered educational environment, the roles of students and instructors may also be transformed. The role of the instructor can be altered to become more akin to a facilitator than a lecturer, while the role of students can be altered by allowing them to become active learners.

Both teachers and students are not always comfortable with collaborative and student-centred activities because such activities "change the traditional social structure of the classroom" (Berge, 2002: 184). Role transformation is one of the main challenges that face teachers involved in the delivery of online courses. As Niederhauser and Stoddart (2001: 29) asserted "computers have been primarily used

as teaching machines, rather than serving as a catalyst to spur the instructional reform movement."

Because many teachers are not experienced in teaching online, neither are they trained to use such environments, and consequently they will transfer the teacher-centred practices that used to work for them in a traditional classroom to the online environment. There is a need, then, for courses and guidelines that provide teachers with adequate training (De Freitas and Neumann, 2009: 987; Niederhauser and Stoddart, 2001: 29; Rosell-Aguilar, 2006b; Samson and Collins, 2012; Zhao, 2003: 4). Teachers also need to receive support in their online teaching activities (Heathcote and Prakash, 2007). Training and support enable teachers to carry out the complex and demanding role of teaching online and to develop requisite knowledge, skills, attributes, and competencies (Baumann and Shelley et al. 2006; Guichon, 2009; Guichon and Wigham, 2016). Niederhauser and Stoddart (2001: 29) concluded "Teachers need assistance in becoming more aware of how computers can be used to help their students meet a range of instructional objectives." MacKinnon (2013b) explored the barriers to engagement and adoption of telecollaboration in the UK., and how these barriers could be addressed. The author concluded that 'a good deal of tutor skill is required to ensure that interactions are positive enough to gradually, over time, move learners out of their comfort zone, with success bringing greater confidence' (MacKinnon, 2013b: 11). Similarly, Zhao (2003: 4) argued that "for teachers to use technology, they need to develop knowledge that enables them to translate technological potentials into solutions to pedagogical problems, which are very local and deeply situated in the teacher's own contexts." This is not to suggest that teachers should change their pedagogy even if reluctant to do so. Student-teacher interaction should aim to achieve

different objectives from those that could be achieved from student interaction with computers.

2.5.14 Technical consideration. A further disadvantage is related to technical problems. When adequate Internet connection and infrastructure are available it presents an opportunity for online learning. It is crucial to have good technology because any problem with it can affect online learning and present a constraint. In many of the studies about teachers' and students' perceptions of their experience with the technological learning environment, one of the primary articulated concerns was related to technical issues (Deutschmann, Panichi, et al., 2009; De Freitas and Neumann, 2009). A synthesis of the literature in this area (Singhal, 1997; Garrett, 1991; Tiene, 2000; Maguire, 2005; Rosell-Aguilar, 2006a, b) resulted in a list that included the following concerns:

- lack of connectivity/access;
- setup problems;
- inadequate infrastructure, hardware, and software and technical support;
- lack of systems reliability
- faculty are concerned about developing effective technology skills and
- lack of training
- concerns about security issues;
- when lines are busy due to many users, it may take time to access information or browse the Net, and
- technical glitches themselves can lead to frustration;
- accuracy and reliability of information on the Web;

- students' ability to make use of the large database on the Web;
- access issues as any faulty technical component can cause virtual places and online medium (such as discussion forums, online courseware and online discussions) to cease to function properly.

Song et al., (2004) noted that it is important to reduce technical issues to the extent possible from the start of the learning experience. There are many technical prerequisites that are essential to the success of the use of technology in education. The rapid advance of technologies raises certain considerations about the practical consequences of development such as equipping staff with the required skills to use new technologies in education (Benini and Murray, 2014). Hammond, et al, (2009:17) report the findings from a study of student teachers at a university – school initial teacher education partnership in England who were considered very good users of ICT. The authors raised the question: why do some student teachers make very good use of ICT? One of the highly influential factors that helped teachers make good use of ICT was related to "extended personal experience of using ICT. This gave student teachers the confidence to use ICT; allowed them to develop effective strategies for learning new skills; and gave them an awareness of the value of ICT based on its application in their own learning"

Previous perceptions about Internet based language teaching show that technical problems, including low sound quality, weak Internet connections, and the kind of tasks designed to be taught via the medium, seem to be part of many online courses (Rosell-Aguilar, 2006b). Yang and Chen (2007: 876) investigated students' attitudes and opinions about online language learning. The researchers adopted "a critical perspective as observers" to learn more about the difficulties of technology-enhanced language learning in high schools. Results indicated that the technology

was not fully exploited in Internet English learning partially due to technological malfunctions. Anecdotal evidence shows that dealing successfully with these problems does not seem to be a straightforward task for teachers.

Technical difficulties and sound quality seem to cause frustration for some teachers and students. Carr (2000) discussed the case of a teacher who found that the technical obstacles, combined with other factors such as the need for high learning motivation from students, and conflicts with the teachers' pedagogic approach made his online teaching a "disaster (Carr, 2000). Rosell-Aguilar (2006b: 8) reported a similar case where one of the Open University's experienced teachers who had completed all the required training described her tutorial of teaching in the new environment as a "disaster" due to many technical difficulties that included "loss of sound and students getting disconnected for no apparent reason. (The teacher) was disconnected a few times for a few minutes each time." The teacher expressed her feelings of being "a bit down" about this particular experience of teaching online (Rosell-Aguilar, 2006a). When such problems happen with students, this can also lead to a feeling of frustration, which Sotillo (2006) cautions, can negatively affect language learning outcomes.

In spite of the feeling of frustration that was experienced by some teachers and students due to low sound quality and other technical difficulties, many studies indicate that most teachers and students are positive about the use of technology in language learning. Rosell-Aguilar (2006a) examined the perceptions of 18 tutors who spent 1 year in teaching an online course for beginners. Although some teachers reported experiencing technical difficulties that they believed impacted the learning experience, most of these teachers found the experience of teaching online positive. Similar findings occurred in another study (Rosell-Aguilar, 2006b) that focused on the

impressions of a group of students and their experiences of learning with audio-graphic conferencing. Findings suggested that students faced some technical problems when using the synchronous communication, but generally liked learning with the audio-graphic conferencing tool that was perceived to provide "a good, convenient learning environment."

Similarly, in a study by Hampel and Hauck (2004), the authors reported the experience of 15 tutors who taught a language course online (German upper-intermediate). The study focused on the teachers' perceptions of teaching the online language course through audio-graphic conferencing medium (Lyceum). Data collection included the use of questionnaires which sought feedback from teachers on technical issues such as installing and using the synchronous tool and the quality of support they received from the helpdesk. The teachers' main concerns were related to ISPs (Internet Service Provider) and the Internet connection as well as difficulties related to sound quality. Most of the teachers reported these technical difficulties and issues impacted the online learning experience. Most teachers had a positive experience as they became more familiar with teaching online using audio-graphic conferencing and consequently became better equipped to address student needs.

In the same study, students were also asked about their perceptions and experiences of the main tasks and warm-up activities used in the course. Thirteen participants answered a questionnaire. Results were analysed using a qualitative research approach to analysis, and to a more limited extent, a quantitative approach. The researchers also used an online observer's report. Results shed light on a number of technical barriers. These included sound quality such as voice distortion or total loss of voice that caused difficulties of being heard or hearing others, disappearance of the loudspeaker sign that indicated who was speaking, and loss of Internet

connection, especially when doing certain activities such as switching chat rooms. In addition, "Some problems resulted from user centred issues, or were connected with equipment (users having a variety of PCs, Internet Service Providers (ISPs), and microphones). Other problems involved the software" (Hampel and Hauck, 2004: 72).

Wang and Chen (2007) studied different types of technical problems. Participants who used dial-up connections had problems with sound quality as the sound was unstable at times and "packets of data were lost." Other problems were occasional. In one incident, the teacher could not hear the voice of the participants because the sound volume was muted by accident. On another occasion, the teacher could not log on to the virtual environment due to some problems with the teacher's computer settings. Although these problems were eventually solved, they led to the loss of some valuable online time. Wang and Chen stated that the enthusiasm of the participants about the use of "SLMS-based learning was evident" and that "despite these problems, all participants suggested the inclusion of this type of learning in their distance programmes in the future" (Wang and Chen (2007: 4).

2.5.15 Computer literacy and training. Limited computer literacy presents a further constraint in online learning (Verheijden, 2013). Online students may enrol in courses with no experience or with insufficient experience in computing and without adequate access to the required hardware and software equipments. Students may not have the computing skills required for success such as typing or keyboarding or other computer literacy skills (Muilenburg and Berge, 2005; Warschauer and Whittaker, 1997). At other times, students may not know how to transfer their existing computer skills into new contexts. In the case of learning a foreign language online, this can be more challenging than learning other subjects. One of the teachers in a study by

Rosell-Aguilar (2006b: 5) stated it was difficult to "cope with the technology at the same time as learning a new language." For these and other reasons, training students in computer literacy skills is seen as crucial for success in the online education (Warschauer and Whittaker, 1997; Winke and Goertler, 2008). Learning computer skills helps students exploit the different tools and resources in the online environment (Matthews, 2009).

Online synchronous learning environments, for example, require a new literacy with regard to the use of multimodal communication (Ciekanski and Chanier, 2008). Hines and Pearl (2004) described a number of techniques and strategies that enhance the use and management of synchronous and asynchronous written communication. According to the authors, limited typing skills can present a disadvantage especially in synchronous text-based interaction where students who have poor typing skills may feel intimidated (Johnson, 2006). In addition, synchronous text based communication may present a disadvantage to some students because they need more time to put their responses in written text and then type in these responses because synchronous text-based communication may require a longer timeframe to process than verbal communication. The recent implementation of audio-graphic conferencing in language learning presented new challenges for both teachers and students as the interaction in this environment usually requires simultaneous use of different modes of communications (multimodality) and the ability to multitask, a skill not all students possess.

2.6 Conclusions

This chapter presented a body of literature reporting research on distance and online learning environments, theories of learning, theories and pedagogical approaches to foreign language teaching, and finally views and studies on the

opportunities and constraints of online learning. Findings show students demand more synchronous opportunities and timely interactions with teachers and peers (Shi and Bonk et al., 2008; Oliver, 2012). Findings show challenges such as lack of social cues, students' inability to do self turn-taking, technical problems, lack of independent learning skills, the nature of automated feedback, and time constraints hinder the use of the different formats for delivery in the online environment. Students have demanded opportunities for enhanced feedback such as more humanized and personalized feedback than provided by current software programs (Felix, 2005a; 2003b).These difficulties require compensation strategies to be employed.

As well, online education scholars have concerns with course quality through the various disciplines and departments within their respective institutions (Austin, 2010; Endean et al., 2010; Forsyth et al., 2010, Picciano, 2009; Westerfelt, 2011). Faculty are concerned that instructional goals for online education are not associated with adequate support (Graham and Jones, 2011; Lee et al., 1010; Singleton and Session, 2011). Faculty members, as shown in the review of literature, desire a system that supports accomplishes online education goals while maintaining academic quality and rigor (Berta, 2011). Based on these findings, the purpose of this qualitative case study was to determine if an online environment could support English language learning in the Syrian Virtual University, a study that has not been done. Results contribute to the knowledge because no study has been conducted in this particular context, the Syrian context, to determine if such pedagogy has efficacy.

Specifically, what we do not understand about technology and language learning is the difficulties that faculty and students face in this particular context, and what strategies were employed to overcome these difficulties. We also do not understand what opportunities this environment has to offer and how these

opportunities are exploited. The study improves our understanding of the ability of faculty in this and similar contexts to bring about sustainable change in language learning. This study allows Syrian faculty to help define the future of CALL.The discussion chapter includes suggestions on how video conferencing can be tied as closely as possible to the actual needs of teachers and learners, and how this can help in-service training of future English teachers and meet long-term development needs in this particular context and in similar contexts.

The literature tends in many instances to offer general views about the impact of technology in language learning and provides over-optimistic views of this impact particularly in the case of early stage research into ICT. In reality, however, teaching with technology is a complex process where many contextual factors interweave and impact to a large extent on technology acceptance and how technology is used. Successful integration of technology involves an acceptance of technology and the use of different tools and applications to serve a spectrum of language learning needs. With these points in mind this research makes a contribution to the literature as it explores the opportunities and constraints of the use of technology in language learning but takes a more critical view of new technology, which emphasizes complexity. In addition, many research studies about the integration of technology in education were set up in Western settings. This study focuses on the Syrian context which is under-researched. Lastly, there has been too little attention paid to the end

users' (i.e. teachers and students) perceptions. Starting to address this information gap about faculty and students' perceptions of ICT was the primary purpose for this study.

2.7 Summary

The use of new technologies especially audio-graphic conferencing offers many opportunities for language learners. There are numerous challenges that face both teachers and students as they move towards the use of new technologies and practices in the online environment. The majority of the studies that have been conducted, as cited above, about the use of online environments for language teaching were focused on the use of written CMC. A few studies focused on the use of audio-graphic conferencing in conjunction with other modes of CMC, which the present study was focused on. The following chapter will discuss the data collection process and the methodology which was used for this research study.

Chapter 3.0 Methodology

Online learning involves the use of synchronous and asynchronous CMC tools. As technology continues to develop, researchers and language faculty are facing the challenge of how to utilise new tools concomitant with sound pedagogical goals. The purpose of this qualitative study was to examine the nature, opportunities, and constraints of a particular online environment where audio-graphic conferencing was implemented as the main medium of delivery of the English course. The research questions that guided the methodology as drawn from a review of the relevant literature were:

RQ: Can the online environment support English language teaching and learning in the Syrian Online University?

Subordinate research questions were:

RQ2: What is the nature of the current online environment?

RQ3: In what manner is the online environment used by faculty and students in the English programme at the Syrian Virtual University?

RQ4: What are faculty and student perceptions of the opportunities provided by the online environment in the English programme of the Syrian Virtual University?

RQ5: What are faculty and student perceptions of the constraints of the online environment in the English programme of the Syrian Virtual University?

The present study was an exploration of the complex interaction between people's actions and activities and the connection of these experiences to the learning process. A methodology was needed that emphasised the experiences and perceptions of the participants and their actions, thoughts, feelings, and needs. A qualitative method met the basic requirements of empirical science: to explore a bounded system stake (1995) or a case over time through detailed, in-depth data collection involving

multiple sources of information rich in context to provide a detailed description of the target phenomenon (Creswell, 2012).

3.1. Overview of the research process

The original plan of this research study was to review the literature during my first six months of the first year of PhD then start data collection in the same year. The main data collection was supposed to take place during the second year, the analysis report of findings and discussion was supposed to take place during the third year. However, the actual timeline of data collection (when to collect data and how) was determined to a large extent not by my original plan, but by the circumstances of the research field as negotiating access was an ongoing process throughout the three years of study, i.e. from the start of data collection and till I left the field . Consequently, the first year was dedicated for reviewing the literature and designing the study. It was also dedicated for examining and analysing data from the materials. The second year was dedicated for observation of the online sessions and analysis of data from this observation. The third year was also dedicated for piloting and distributing the questionnaires, piloting the interview schedule and online interviewing. The interviews with students and teachers for the main data collection took place during this year (third year of the PhD). Data analysis of the interviews and questionnaires took place after all data from these two methods were collected I started coding the data in October 2009 (during my third year of PhD). In January 2010 I had one year extension to finish analysis and writing up. Due to financial and personal circumstances I had to return home before I finished writing up and therefore, there has been a considerable delay in completing the thesis. I have to acknowledge here that there are two problems involved in the time shift, namely, some of the literature referenced in this thesis is dated but it is still relevant and sets out the basis for the

discussion in the last chapter .Another difficulty which is associated with this time shift but also with research involving educational technology in general, is that studies are often outdated by the time they are completed. However, it is interesting to note that although video and audio conferencing has been in use for years, the problem facing students and teachers have not substantially changed. In addition, the questions about problems and barriers that students and teachers face when they try to integrate computer technology in their teaching and learning, these questions do still exist today and researchers are discussing continually how to integrate technology into language learning environments and what role the computer can play in the current language instruction. However, what makes this study unique is that it is an intrinsic case study that took place in one specific institution.

The following table provides a detailed overview of the research process. It includes an overview of how the research process (data collection and analysis) unfolded so it is absolutely clear to the reader when and how the research activities took place.

Table 3: An overview of research activities (timeline).

Research activity	When (chronological order)	Brief Comments
asking for permission (access)	First year of PhD 2007	Permission was asked by emails and through the phone from the university administrator and course manager (gatekeepers). I had verbal approval and

		was sent username and password.
Literature review and research design	First year of PhD 2007	Methods of data collection included: observation of interactive materials and sessions, interviews with teachers and students.
Examining and analysing Online materials	First year of PhD 2007	Materials were accessed through user name and password. Samples of five levels of proficiency were analysed. Data analysis included the use of Qualitative content analysis (deductive coding). Data collection and analysis took place simultaneously.
Pilot of observation schedule	The observation schedule was piloted using the recorded sessions which took place during October and November 2007.	As a result, I decided to use recorded sessions as this allowed me to play the sessions as needed. I still wanted to observe some live sessions in order to

		compare the two techniques.
Observations in the main study	Collection and analysis of observation data took place in Second Year of PhD. in August during summer term 2008, 5 sessions of level 1 of the online course were observed. During autumn term September and October, 2008 more sessions were observed ((I observed eight more sessions). Data analysis took place after data collection was completed (during October, November and December 2008)	Data analysis included the use of Qualitative content analysis (deductive coding). Data analysis took place after data collection was completed. What about data from the two live sessions? Observation was used for designing a questionnaire and an interview schedule.
pilot questionnaires	In Nov 2008 (at the end of year two of PhD) the pilot questionnaire was distributed. They were completed and returned	The pilot questionnaires were distributed to ten students. Nine students completed and returned the questionnaires. The aim

	around mid of Jan 2009.	was to pilot the open ended questions and the use of word document for this purpose. As a result, the questionnaires were slightly revised. The questions were tested on a small sample of students (ten students) who were enrolled in or who completed the English course and who had the same or similar characteristics of the students who would complete the final questionnaire in the actual study. Nine students completed and returned the questionnaires. As a result, the questionnaires were slightly revised.
Pilot of interview questions	At the beginning of third	The aim was to pilot online

	year of PhD 2009, after the pilot questionnaires were completed and sent back to me, interviews were held with two of the students who completed the pilot questionnaire. One interview was held with a teacher who taught an online course in order and collecting information. Interviews were held with a number of students for the same purpose but also to pilot the interviews.	interviewing tool and to make sure that skype was an appropriate tool for interviewing. Online interviewing proved to be successful. I downloaded different communication programs in order to suit whatever the student may have and be ready and save time. The aim was to pilot online interviewing tool and to make sure that skype was an appropriate tool for interviewing The result was adding another method: unstructured interviews with two main questions.
Distribution of questionnaires for main	The pilot questionnaires were distributed and	I sent the questionnaires and received them by

study	received during June 2009 third year of PhD. the questionnaires were completed during a 4 week period in June 2009. At the same time I was doing the interviews with students who accepted to take part in the interviews.	email. The questionnaires in the main study were sent to 43 students And completed by 24 students.
Interviews with students	Interviews with students took place during June 2009 (third year of PhD)	Those who completed the questionnaire and accepted to take part in the interviews were interviewed. In total 17 students could be reached. Ultimately 11 students were included in the interviews.
pilot interview with one teacher	Around mid of Jun 2009 (third year of PhD).	One interview was held with a teacher who taught an online course
Interviews with teachers in the main study	Around mid of Jul 2009 I was sent contact details of	The interviews were held with eight teachers. I was

	teachers (third year of PhD. Interviews with teachers lasted from mid of July till mid of September 2009	provided with the contact details of all of the 14 teachers so I sent emails to them and those who replied and accepted to take part were interviewed. Eight teachers were interviewed.
Data analysis of questionnaires and interviews	I started data analysis of student interviews, teacher interviews, and questionnaires. This was mid of September 2009 (third year of PhD).	I started data analysis as soon as I finished data collection from these two methods.
triangulating data and drawing conclusions, reporting the findings	Extension year 2010	Working on feedback from our supervision meetings
Writing up	Extension year 2010	This was an ongoing process which started with the literature review and continued till the end. In December 2010 I only had finished the writing up of five chapters and had only the last chapter left

		(discussion chapter). I had to return home due to financial and personal circumstances.
Writing up	2015	Completion and submission of thesis was in 2015.

3.2. Pilot testing

In order to establish the feasibility of collecting various data and testing the methods that might be used to analyze this data, I did pilot testing where I piloted data collection methods. However, it is important to clarify here that I did not do a separate pilot study which was rigorously researched. I conducted pilot testing where I tested the feasibility of the methods which I designed for data collection, namely observation schedule, questionnaires and interview schedule, before I started data collection in order to see if they were suitable. Pilot testing assists the research in determining if there are flaws, limitations, or other weaknesses within the methods designed for data collection and allows him or her to make necessary revisions prior to the implementation of the study (Kvale, 2007).The data collected in this stage was for the purpose of testing these methods (e.g. online interviewing) and was not included in the study.

3.3. Appropriateness of the research method and design

Choosing a study method and design requires understanding the theoretical and logical foundation of different types of research (Merriam, 1998: 1). Muijs (2004) determined that there are only three methods for conducting research: quantitative, mixed-methods, and qualitative. Within each method are multiple choices of design.

Yin (1989) recommended that sufficient time be dedicated by the researcher to defining the research questions as the form of the research question provides an essential clue regarding the appropriate research method and design to be implemented. The research questions could not be reduced into smaller testable hypothesis that could be answered with numeric responses that could be analyzed statistically (Creswell, 2012); consequently, a quantitative method was deemed inappropriate for the study. A mixed methods study that incorporated a quantitative method of data collection and analysis was also deemed inappropriate as the research questions would not support numeric data collection and analysis. Instead, the research questions were deemed pertinent to the perceptions, attitudes, and lived experiences of the participants; thus, a qualitative method was chosen. Data collection was sought through three sources: (a) a qualitative survey questionnaire that required write-in answers to open-ended questions, (b) interviews with students and faculty, and (c) observations of online classes in session and web based materials.

3.3.1 Qualitative method. In this study, a thoroughly qualitative approach was used to catch the complexity of a unique case. All data were collected from an online environment that constituted the natural virtual setting of the phenomenon under study, namely, the nature, opportunities, and constraints of an online learning environment where audiographic conferencing was implemented as the main medium of delivery of a language course for students learning English as a second language.

In this study, qualitative research included the use of many forms of data including the materials used by participants, results of interviews with participants, and observational notes of participants (Bogdan and Biklen, 2003). A qualitative questionnaire was circulated that asked preliminary questions about the online learning experience and included demographic questions and an invitation to

participate in an interview. Interviews lasted approximately 1 hour for the purpose of gathering the perceptions, attitudes, and lived experiences of both students and faculty. Observations of online English classes were made over several weeks.

As mentioned above, the study started with a qualitative questionnaire with open ended questions. It is worth noting here that although questionnaires are more typical of a quantitative approach, the questionnaires in this study were similar to structured interviews in the sense that they used standardised questions to collect qualitative data. However, while structured interviews are administered by the interviewer, the open ended questionnaires in this study were self- administered and required written answers. Hence, although questionnaires are usually associated with quantitative research, the use of this method to help discover new qualitative material is typical of qualitative approach (William M. 2000).

The data analysis method was theme analysis (Anderson, 2007), which was appropriate to answer the questions "who says what, to whom, why, how, and with what effect" (Babbie, 2003: 309); thus, participant responses were separated into categories to search for themes and patterns. Farber (2006) asserted qualitative data requires interpretation and organization into categories to enable construction of a picture by using open coding where themes, patterns, concepts, jokes, or similar features can be identified. Findings from the questionnaires and interviews were inductively generated from the data (Bogdan and Biklen, 1998:4; Stake, 1995:74-75). Findings from the online sessions and the interactive materials were based on qualitative content analysis which included analysing the content of the data using classification (Anderson, 2007). This approach is part of descriptive qualitative research because it included the use of materials, observational notes, and snapshots (Bogdan and Biklen, 2003).

3.3.2 Case study design. Stake (1981) stated that, among other designs, the case study design of a qualitative method is an empirical inquiry that (a) investigates a contemporary phenomenon within its real-life context, when (b) the boundaries between phenomenon and context are not clearly evident, and in which (c) multiple sources of evidence are used. Stake explained that knowledge learned from case study is different from other research knowledge in that a case study is more concrete and more contextual that other designs of a qualitative method. Yin (1989) defined case study research as different from other approaches to empirical inquiry as the correct approach when it is important to convey a holistic and dynamically rich account of an educational phenomenon (Merriam, 1998, as in Kenny and Grotelueschen, 1980). Merriam (1998) suggested one strategy for assessing if a phenomenon qualifies as a case, and for defining the boundaries of the topic or the case, is to ask how finite the data collection would be. This involves considering whether there is a limit to the number of people who can be interviewed or a finite amount of time for conducting observation. The number of students in Syrian Online University English language learning classes in the target time for the study was limited by enrolment at the time. The number of faculty teaching the course was dependent on the number of sessions and classes. A holistic case study design was selected as appropriate for the study (Creswell, 2003, Simons, 1996, stake, 1995, Yin, 2008, Merriam 1998).

3.3.3 Unit of analysis. In qualitative research, the case can be either an individual person, a group of persons, or an event or entity (Creswell, 20012). Some conditions prevail in determining the unit of analysis of a case study. The definition of the unit of analysis, and therefore the case, is related to the way the research questions were defined. In the present study, the research questions were focused on

a language course for students learning English as a foreign language at the Syrian Online University. The intent of the study was to investigate the opportunities and constraints of the online environment. The case in this study, and therefore the primary unit of analysis, was the online environment of the English program at the Syrian Online University. Another characteristic that qualified the online environment in the study to be a case for investigation was that it conformed to the definition of case study as a bounded system that is complex and functioning, as discussed next.

3.3.4 Bounded functioning systems. What defines an investigation as a case study that distinguishes it from other types of research designs is defining the limits and boundaries of the case (; Merriam, 1998; Smith, 1978; Stake, 1995; Wolcott, 1992; Yin, 1994). Stake (1995: 2) emphasized that the case is a "bounded system...a specific, complex, functioning thing." Stake asserted that studies that do not conform to this definition are less commonly considered case studies. Merriam (1998: 27) stressed this definition when she noted "the single most defining characteristic of case study research lies in delimiting the object of study... if the phenomenon you are interested in studying is not intrinsically bounded, it is not a case." To illustrate this concept, Miles and Huberman (1994:25) present the bounded context of the case in a diagrammatic manner with a heart bounded by a circle. The heart represents the case which is the focus of the study, while the circle defines what will not be studied.

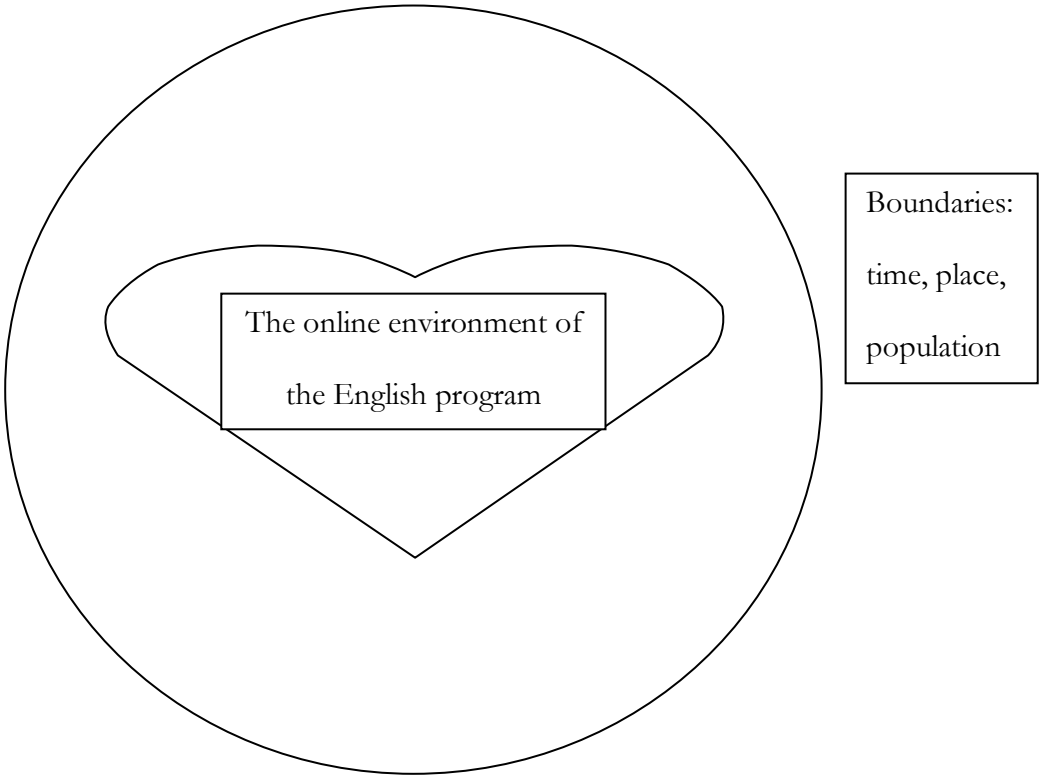

Chart: 1 The Case study as a 'bounded system' in this inquiry (Adapted from Miles and Huberman

As discussed above, the online environment of the English program, or the case, is a complex entity. This complex environment is a bounded functioning system where different major elements interact: online students, faculty, online teaching practices, educational technology, and educational materials. Other elements of the online environment included five levels of English language proficiency (beginners, pre-intermediate, intermediate, advanced), and the many online sessions conducted throughout the academic year.

The online environment was functioning as a natural virtual setting where social interaction, communication, and activities took place between faculty and students to achieve certain language learning objectives. The case is bounded in time,

population, and virtual space. The case is bounded in time because the present study was conducted between August 2008 and September 2009. Programmes that took place before or after this time frame were considered outside the time boundaries of the case. Excluded from the investigation were the technicians and the administrators of the English program as they were considered outside the population boundaries of the case. The online environment occupied a specific virtual space that was accessed by students, faculty, and the researcher. Only authorised people could access this space as it required usernames and passwords. The study was focused on the series of events that happened within this space. In addition, the study is bounded by number of people who could be interviewed as well as the number of sessions that could be observed and the materials used during the course.

Establishment of boundaries is essential in a qualitative case study design. No attempt was made to identify or control variables such as student and faculty prior learning experiences, learning conceptions, and learning approaches that may have influenced their responses (for more details see Appendix. A: Students Previous Experience).

3.3.5 Holistic case design. To further delineate the case study approach, a holistic approach was chosen (Stake, 1995). There are no sub-cases within this wider case but the holistic case complex in the sense that it included a number of contributing factors. The holistic dimension consisted of software teaching approaches through audio conferencing as well as teaching approaches with interactive materials, and the perceptions of the faculty and students involved in the process. Each constitutes a part of the case, or the contributing factors that influence the case (Baxter et al., 2008). Each of these dimensions of the online environment has its own question: questions related to the process of teaching in online sessions and

concomitant materials, and questions related to how faculty and students describe their experiences of the online environment. The use of a holistic case design in the study allowed for two strategies of synthesis integration: an open-ended questionnaire and interviews, and observation and examination of materials.

3.3.6. The representative nature of the case

The case presented in this study is an example of an intrinsic case study. I had genuine interest in this particular case and in the subject due to my professional and educational background (see chapter one and how my background as a researcher affected my choice of the case). The "case" (the online environment) was intrinsic in the sense that the educational materials which were designed for individual study and for computer-human interaction were delivered through both computer human interaction and human-human interaction. In this way students were, for example provided with both computerised and human feedback. So the approach which was taken for delivering the materials was unique. However, what was typical about this environment was the use of video and audio conferencing for language learning. It is worth mentioning here that the results of intrinsic case studies have limited transferability (see Stake, 1995:42). My findings do not claim to be universal in a statistical sense, and do not try to generate a generalisable theory as in experiments and multiple case studies. Rather this inquiry presents a report of what happened in the virtual environment of a particular English language course at a particular time. The descriptions and interpretations were used to deeply understand the context and setting (Creswell, 1998), and to create a rich picture of what was happening in this setting and help emphasise the voices and actions of participants, rather than to build a theory (Stake, 1995). By concentrating on a single entity with clear boundaries and multiple characteristics (Merriam, 1988) this holistic case study approach aims to

uncover the significant factors that support or hinder the learning processes in this environment. Although the results of this case study are not generalizable in a classical sense conclusions and insights that are provided in the present study can be of wider relevance. The empirical judgment of whether we can apply what can be learnt about the case to other like contexts or even to the same context at some other time the reader needs to make using the thick description provided in this study.

3.3.7 Summary of the method and design. The critical feature of qualitative case study research is the use of multiple sources of evidence. This can be "a major strength of case study data collection" (Yin, 1989:96). The reason for using such a broad approach is to develop an in-depth picture of the case and detailed account by situating the case with its natural setting (Creswell, 2012). Yin (1989) contended that the researcher can choose among several sources of evidence according to the type of case study, with each source generated and handled independently to guarantee it is properly used. Results provide the rich, thick description with which to develop conceptual categories. Merriam (1998: 38) advocated that the "case study researcher gathers as much information about the problem as possible with the intent of analysing, interpreting, or theorizing about the phenomenon." In the present study, more than one source of evidence was incorporated into the design to collect data about different dimensions of the online environment, and each of these required a different data collection method. Results were intended to provide a detailed in-depth picture of the online environment and the different aspects and elements that support or hinder the process of language learning in this environment.

3.4. Procedures and participants

3.4.1 Participants. Credibility of qualitative research depends on the ability of the researcher to present multiple realities in his or her research and the richness of

the information regardless of the sample size (Patton, 1990). Qualitative studies explore a relatively smaller group of participants and their experiences related to a subject. Kuzel (1999) established that 5 to 20 participants were a sufficient sample for a qualitative study. Suzuki, Ahluwalia, Kwong-Arora, and Mattis (2007) observed that the number of participants in a case study reflects the study's purpose. Creswell, Hanson, Clark, and Morales, (2007) concluded that 10 to 12 participants may be sufficient for data saturation in qualitative inquiries that involve the understanding of the perceptions, attitudes, and lived experiences of participants. Creswell (2012) asserted a successful sample in a qualitative study could range from 1 to 40 participants, and Polkinghorne (1989) suggested from 5 to 25 participants was sufficient. The sample size for the study was based on the number of students in the English online classes during the study period and number of faculty engaged to present the sessions (for more discussion about the representativeness of student sample see Appendix. B: Gathering Data through Technology).

3.4.2 Sampling frame. Three forms of sampling were engaged. Initially, snowball sampling was used to locate potential student participants. Second, convenience sampling was used to identify students appropriate for inclusion in the study. Finally, purposive sampling was used to ensure that students were and within the boundaries of the case, males and females from all five levels of English proficiency, classes, computer skills, and age.

Although the Syrian Online University approved the study, no student information was provided that would allow contact with student. As a result, personal contacts from outside the university were enlisted to reach students. Once an online address was available, the qualitative survey questionnaire and invitation to participate in an interview was electronically distributed (Appendix C: Qualitative

Survey Questionnaire and Invitation for Student Interview). The initial snowball sample was achieved by asking students who completed the questionnaire and participated in the interviews to suggest other students who might be willing to participate in the study.

Faculty were invited to participate after the Syrian Online University provided the email addresses and phone numbers of faculty members in the English programs. They were contacted with an email letter of invitation (Appendix D: Letter of Invitation and Interview Protocol for teachers).

3.4.3 Process. Approval to conduct the study was sought (Appendix E: Letter to Syrian Online University Seeking Study Approval) on May 17, 2007 and received (Appendix. F: Letter from Syrian Online University Approving the Study) May 22, 2007. The interactive materials were examined. An observation schedule was formulated based on the number of faculty participating and the sessions they conducted that could be recorded or observed in person (Appendix G: Observation Schedule). A qualitative survey questionnaire for students containing an invitation for an interview was formulated based on the research questions As well, an interview protocol based on the research questions was constructed. Both the qualitative survey questionnaire and the interview protocol for students were pilot tested. Finally, an interview protocol based on the research questions was constructed, and pilot tested, and a letter of invitation to participate was emailed to faculty. Details of these processes will be found in the following sections.

3.5 Observations

Observation is an important method in qualitative research because it assists the researcher to perceive educational practices in a live environment (Flick, 2002),

which assists in understanding people's behaviour (Hammersley and Atkinson (1989). Patton (1990) and Cohen et al. (2000) confirmed that observation allows the researcher to see things that might be missed otherwise. Observations allow the researcher to move beyond the participant's perceptions and opinions.

Classroom observation is one of the primary methods used in qualitative research of traditional, physical environments. Classroom observation can be defined as "non-judgemental description of classroom events that can be analyzed and given interpretation" (Gebhard, 1999: 35). Denzin (1983), Gilmore and Carson (1996), Robson (1993), and Stake (1995) recommended note writing about observation in traditional settings because, at the time, online environments were not a common phenomenon. Collection of observation data requires a research setting to be observable, as online environments provide.

3.5.1 Observation protocol. Data were collected through visual observations of the virtual context of the online environment and from examining the relevant web based interactive materials. The observations of the online sessions were similar to observing a normal classroom in the sense that they yielded data that needed to be analysed in a qualitative manner. The data included screenshots that were easy to handle. Screenshots were also coded and used as examples of specific teaching practices. Data from the observations were enriched with examining many screenshots (visual material) related to the online session. Screenshot assisted in developing themes and patterns during data analysis.

3.5.2 Observation of materials. Observation included exploring and examining the interactive web-based materials (web based environment) that were integrated into the English course. The website was accessed and the researcher interacted with relevant materials. The observational data of the Web-based teaching

environment was collected in the form of observational notes and visual data. One-hundred twenty screenshots were collected and labelled for transcription and analysis. These were saved in a Word document. The materials were examined and analysed simultaneously during the first year of PhD 2007. I first went to the material website and started to interact with these materials and familiarize myself with them. Materials were analyzed from all class levels. A checklist was used to decide what types of materials were involved.

In addition to exploring the online materials, fieldwork included exploring different features of the online environment such as chartrooms, discussion forums, café forums, library access, and other places where student and faculty met. The different features of the audio-conferencing application such as Web Demo (e.g. text chat, audio chat, whiteboard etc) were also explored for over 40 hours to learn how these features supported language learning. Data from these collection points was used for both descriptive and analytic purposes.

3.5.3 Observation of sessions. Teaching in the online environment also involved the delivery of synchronous online lessons that were conducted through an audio conferencing system. In addition to observation of the web based materials and venues described above, observation included observation of sessions which were conducted using audio graphic conferencing. These two observations took place at independent time. An observation schedule was designed and tested using sessions that took place during October and November 2007 (for more details about the observation schedule see Appendix. H: Piloting the Observation Schedule). The online sessions were complex environments where much was going on at any given time and thus were impossible to observe simultaneously. The sessions were

recorded which presented an advantage in this study as episodes could be replayed and watched repeatedly when needed.

In the second year of the PhD program 2008, I accessed the sessions and started my observations. Observation of sessions in the main study took place over a period of 8 weeks between the months of August and September, 2008. Each session lasted for about 1 hour. Five sessions of the online course were observed. From September and October, 2008, eight sessions of classes were observed. Two live sessions were observed in April, 2009). There were five levels of English proficiency in the English course, and all levels were observed except Level 2, which was due to technical problems. Observation of the recorded online sessions yielded 214 pages of notes and 154 screenshots of critical incidents.

The number of students who attended each of the sessions varied between two to ten students. Although each English class registered about 20 students, only half this number attended the sessions, and in many cases, only two students attended, which was the minimum number required to hold a live session according to English program regulations. There were few students in some of the sessions as attendance was not obligatory for students; however, students who chose to attend were assigned marks for attendance and participation and this mark contributed to their mark in final exam.

Observations of the online meetings included taking observational notes, collecting visual data (screenshots), and collecting information about what was said and done in the sessions by students and faculty. The decision to observe recorded sessions was taken after observing the recorded sessions from the pilot studies. During the replays of the recordings, observational notes were taken of one or another of the dimensions of teaching that was manifested. The observational notes were

"statements bearing upon events experienced through watching and listening...the Who, What, When, Where, and How of human activity" Schatzman and Strauss (1973:100). The duration of classroom activities was calculated by measuring their length on the recorded session.

The dimensions of teaching deemed most important were (a) the nature of the online, (b) the nature of the materials that the faculty were teaching, and (c) the methods and techniques the faculty were using to teach these materials. Online environments are unique research settings that differ from traditional physical environment. The observer in physical setting takes a panoramic picture of the scene for some time and zooms in for specific events. The focus is on one event, or on one observation activity, at a time, which does not capture all the details and events that are happening in the setting. In contrast, the observer in a virtual setting is able to see and record all of the events in the classroom and access all of the participant interactions at once. In addition, the researcher in physical environments sometimes faces restraints on movement (Hammersey and Atkinson, 1989), but this is not the case when observing online environments where interactions are usually recorded and captured for future reference; thus, the events that took place in the sessions were naturally saved without any interference on the part of the researcher.

The process of reporting the findings was based on the process of grouping the data into themes and was not reported according to individual students or faculty. As the data was reported in this way, different excerpts from the same students or faculty might have reported under different themes (for example, technical difficulties) depending on the theme revealed in the excerpt. Classes were observed from all levels except Level 2 because of problems in accessing and downloading those particular sessions).

3.6. Qualitative survey questionnaire

The purpose of the questionnaire for students was to obtain some preliminary demographic information from students, and to discover themes for investigation from their responses, and later to purposively select a group of respondents representative of age, gender, and class level. As well, the questionnaire contained an invitation to participate in an interview. The majority of the questionnaire, however, was comprised of open-ended questions with which to obtain a wide view of students' perceptions about the course they had attended. The open-ended questions allowed respondents to respond in their own words from their own perceptions, attitudes, and lived experiences. Twelve open-ended questions provided five to10 lines empty lines for responses. The questionnaires also included questions about the background information of the participants. The information requested was for the purpose of contextualizing comments from participants. The email address of the researcher was included and respondents were asked to send completed questionnaires to that address.

3.4.1. Pilot study of the qualitative survey questionnaire. To establish the feasibility of collecting various data and testing the clarity of the questions and feasibility of analyzing the resulting data, in November 2008, the questionnaire was pilot tested on nine students who were enrolled in or who had completed the English course and who had the same or similar characteristics of the students who would complete the final questionnaire in the primary study. Six males and three females were selected to test the pilot questionnaire. Of those, two were in Level 1, one in Level 2, two in Level 4, and four in Level 5. One reported being confident with computer use, three partially confident, two not confident, and three not confident at all. None of the data from these students was included in the final analysis.

The pilot questionnaires were completed by the participants and returned by email. The objective of the pilot study was to see if the questions were appropriately worded to obtain the desired information and easy to answer. The participants reported not having any problem with difficult vocabularies, difficult grammatical construction. No problems were reported in understanding and answering the questions. One of the students noted the questionnaire was easy to use because it was administered in the native language of the participants, and questions were about practical rather than abstract matters. As a result of the pilot study, some questions were slightly altered. For example, one of the questions was re-worded and divided into three questions in a way that was more likely to generate more data on certain issues. These students were not included in the main study nor were the results of the questionnaires they submitted.

Two of the nine students who completed the pilot questionnaires were interviewed based on the Interview Protocol (Appendix I: Interview Protocol for Students) before the main study was conducted. The data was not rigorously analyzed, but many interesting themes emerged during the interviews; for example, one theme was technical difficulties. The adequacy and feasibility of normal online communication programs such as Skype and Yahoo messengers for interviewing and collecting interview data were tested. No serious difficulties arose.

The method of online interviewing was also piloted with one faculty member who delivered a methodology course online at a university other than the Syrian Online University. The faculty Interview protocol was implemented. The faculty member was asked about the different aspects of being an online faculty member and of teaching online in terms of opportunities and constraints. The interview lasted for

30 minutes and was conducted through Skype. The method proved to be successful in generating data.

3.6.2 Distribution. The qualitative questionnaire was distributed by email to 43 students and returned by 24 students. Nineteen males and five females responded to the main questionnaire. Of those, three were in Level 1, four in Level 2, two in Level 3, five in Level 4, and eight in Level 5. Four reported being highly confident with computer use, four reported being confident, six partially confident, two not confident, and eight not confident at all. Interviews were held with 11 students between the months of May and September 2009. All students had experienced the course and invited to talk about their perceptions, attitudes, and lived experiences of the course. Students who completed the questionnaires were invited to participate in the interviews at the end of the questionnaire. Self-administered questionnaires allow the researcher to utilise mail in response and therefore reach a large number of possible participants in a number of locations. It is worth mentioning that the response rate for self-administered questionnaires (or online questionnaires) is relatively low (Gunter, et al., 2002: 232). In this study, 24 students completed the questionnaires. Although this may limit the generalizability of the results to the rest of the students, the study does not aim to reach a targeted number of students and is dependent on other methods of data collection such as interviews and observation in order to support the research question. The use of questionnaires was useful in the sense that it gave us a wider view of students' perceptions of the opportunities and constraints of the online environment. However, observations and interviews provided a richer source of data.

3.6.3 Invitation to participate in an interview. Prior to the interviews communication programs were downloaded (Yahoo Messenger, Skype, MSN

Messenger, Google Talk) that would enable the same communication program participants might using during the interview. All students were interviewed using one of the following programs: Skype, Yahoo, and MSN Messenger. Interviews were held with students who chose to take part in the interviews and provided the researcher with a way to contact them personally. In some cases, some students referred other students. This snowballing sampling technique resulted in additional student participants. Students who volunteered were contacted by email or phone to decide a convenient time for an interview Interviews had two purposes: first, to ask further questions about students answers in the questionnaires, and second, to meet with them online to converse with them in a semi-structured way with open-ended questions to benefit from their knowledge.

Students were asked, from their perspective, about opportunities available for the online environment in the English programme of the university constraints of the online environment in the English programme. The questions included issues such as: do you feel that the course meets your needs for learning English; how do you prefer to work in the online sessions; do you prefer to communicate and collaborate with other students in the sessions or do you prefer to work only with the teacher; what do you think about the different tools and resources in the online environment such as the discussion forum and the audio conferencing system; do you have any difficulties when using these tools, are they easy to use; do you face any difficulties when attending the online sessions and when working on the online materials . The interview process was guided by the questions stated above; consistency across all interviews was maintained. The same questions were asked during teacher interviews but with relation to teacher' experience. Qualitative studies explore a relatively small group of participants and their experiences related to a subject.

3.7 Interviews

According to Lincoln and Guba, 1985; Creswell and Miller, 2000, synchronous communication provides an immediate validity check of the interviewees' responses for the following purposes:

1. It provides the opportunity to assess the respondent's intentions.

2. It gives the respondent an instant chance to correct mistakes of facts interpretations.

3. It provides the respondent the opportunity to disclose more information and remember other things that were not mentioned before.

4. It helps the researcher document information whose correctness is approved by the respondent, thus making any later claims the latter of investigator misunderstanding less valid.

5. It provides the investigator the opportunity to summarize information throughout the research process.

6. It gives the respondent the opportunity to evaluate the correctness of data in general and of particular data points.

Online interviewing provides advantages to the researcher (Sapsford and Jupp, 2006, 132; Crichton and Kinash, 2003). First, computer communication technologies offer an environment where informants seem to be more willing to develop their own ideas and explanations (Sapsford and Jupp, 2006, 132) and to reveal sensitive or personal information, which yields richer data than in formants in traditional interviewing in a face-to-face environment (Crichton and Kinash, 2003). Online interviewing also involves some limitations. No opportunity exists when interviewing through audio conferencing for drawing on visual cues or non verbal interaction as it is the case in face to face interviewing (Rice, 1993). In this study, turn taking

happened smoothly between the researcher and the interviewees (Sapsford and Jupp, 2006, 133), allowing for immediate verbal and/or written exchange and instant communication to take place, and for probing of the views of the informants. Text chat was used in two of the faculty interviews as the participants were not able to use voice chat partially due to technical issues. Verbal interviews were used in all other interviews rather than instant text chat as it allowed more of the characteristics of spoken, face-to face communication to be reserved (Sapsford and Jupp, 2006, 132).

3.7.1 Interview procedure. The arrangements for the interview (e.g. time and date) were made over the phone or by email. The interviews were arranged at a time that suited the participants. Interviews began by getting to know the participant, making them feel comfortable, explaining my background, explaining the reason of doing the research, the purpose of the study, answering any questions, and providing clarifications about the study (Appendices D and F). Participants were assured that their real name would not be mentioned in the research and that the information they would give would remain confidential and anonymous.

The interviews were audio recorded using a digital recorder. One faculty interview was conducted on the phone as the person did not have an Internet connection at home. All other interviews were conducted synchronously online using voice chat and/or text chat through Yahoo Messenger, Google Talk, and MSN Messenger).

The interviews were conducted in Arabic as interviewees, especially students, were not sufficiently fluent in English. Two interviews were lost due to a failure in the audio recording. Approximately 24 hours of interviewing was conducted between students and faculty members. The duration of the interviews varied from 30 minutes and 2 hours, depending on the time the participant was motivated to spend in the

interview. Participants, both students and faculty, who spent a longer time in the interview often tended to offer richer data than others.

3.7.2 Student interviews. A semi-structured interview was used because that format provided a valuable research tool for investigating perceptions (Christison and Krahnke, 1986; Wenden, 1986, 1987; Benson and Lor, 1998, 1999). The semi-structured interviews were implemented with open-ended questions. Questions were based in part on themes that were derived from the questionnaires and pilot studies. Meeting with some students allowed the researcher to ask probing questions as a means of follow-up. Open-ended questions that were originally designed for the questionnaire were implemented for the interviews as deemed appropriate. Open-ended questions, as described by Stake (2000), are usually used in semi-structured interviews. This interview method provided an opportunity for participants to express their views freely and to reflect on and talk in detail about experiences. Participants are free to bring up issues, concerns, and information that might otherwise go unquestioned by the researcher and therefore unexplored. Participants are also free to bring up topics they want to relate, but remained guided in the process by the researcher to keep the reflections focused (Creswell, 2012). After the interview finished, the interview recording was transferred from the recorder to the researcher's personal computer. The file would was given a name and number and saved into a folder that would include all the interviews with students. Interviews were subsequently transcribed.

3.7.3 Faculty interviews. Faculty were invited to take part in the study after contact information was provided by the university. Fourteen faculty were teaching in the English course at the time the study took place. The Interview Protocol that was designed for faculty included the same questions asked of students, but was

rewritten to relate to faculty. The interviews were audio recorded. After the interview finished, the interview recording was transferred from the recorder to the researcher's personal computer. The file would was given a name and number and saved into a folder that would include all the interviews with faculty. Interviews were subsequently transcribed.

Fourteen faculty members were teaching the English course at the time the study took place. Ten faculty accepted to take part in the study. Two of the faculty who initially accepted to participate withdrew from the study later. One teacher refused to take part in the study as she was concerned about disclosing any information about the course that she thought might "put her in trouble" Another teacher replied to the initial email that was sent to her, but did not reply to subsequent emails regarding the study. Another teacher showed a positive attitude towards the study, but did not offer any support. Finally, eight teachers participated in the interviews between the months of May and September 2009, three males and six females.

3.8. Role of the researcher

The U.S. National Science Foundation (1993: 33) asserted “The most fundamental distinction between various observational strategies concerns the extent to which the observer will be a participant in the setting being studied.” The role of the researcher is, therefore, an important aspect of the validity of the results. Mahoney (1997: 20) argued that the researcher who conducts interviews should be engaged in the environment of the research while attempting to understand that environment through “personal experience, observations, and interactions and discussions with other participants.” Creswell (2012) contended that qualitative

results are dependent upon the experience of the researcher and their ability to draw conclusions from the words of participants.

One important step in conducting observations is for the researcher to determine his or her role as an observer (Creswell, 1912: 125). There is an array of possibilities for the researcher to choose from while collecting information as an observer ranging from a complete participant to a complete observer (Gray et al., 2007). Merriam (1998) proposed four basic researcher roles while conducting observations: (a) the researcher becomes a member of the group of people being studied, but whose research activities are concealed from the group; (b) the researcher participates openly in the activities of the group as a researcher, but whose role as a researcher is subordinate to this participation; (c) the researcher's activities are also known to the group, but participation is subordinate to data gathering; and (d) the field worker is an outsider who assumes the role of a spectator (Merriam, 1998). According to these authors, the field worker does not typically try to participate in the scene or interact with the people to any large extent, suggesting a detached role where the researcher is watching rather than taking part. This status allows the field worker to be unseen and ubiquitous at the same time (Pearsall, 1970); hence, technology can be a useful medium for direct observation. The procedures followed to gather qualitative data in the first stages of this study (i.e. when I worked on the automated materials on my own and when o observed recorded sessions) were typical of those associated with direct observation where the researcher was present in the virtual environment, but was detached from the participants. Although it should be acknowledged that in this study the use of this technique was more incidental than instrumental, this technique had its own value as information gathering had the priority to participation in the online activities (e.g. exploring and working on the online materials,

attending live sessions) and this was less time consuming than participant observation would have been. An "observer as participant" role was assumed at a later stage of the research process when the questionnaire was distributed and interviews were conducted (Gold, 1958; Pearsall, 1970).

3.9. Subjectivity and reflexivity

The discussion about the role of the researcher is related in a sense to the concept of reflexivity. The qualitative researcher is an instrument of data collection and data analysis (Creswell, 1998:14; Bogdan and Biklen, 1998:4), and who "is left to rely on his or her own instincts and abilities throughout most of this research effort" (Merriam, 2009:52). Hence, subjectivity is inevitable in qualitative research as the data collected and the chosen themes can never be truly free of the influence of personal beliefs and values (Lincoln and Guba, 1985). One of the important issues that needs to be discussed in relation to conducting qualitative studies is related to the concept of reflexivity. As Freedheim and Weiner (2003, 255) explain: "the social identity of researchers affects their choice of research topics, theories, methods, and interpretation of research results...in taking a reflective stance, the researcher acknowledges these connections, is willing to explore them, and recognizes that she is not exempt from the psychological processes she studies in others."

In chapter one, I provided a personal statement on my educational and personal background and explained how this background influenced the choice of the topic and the area of research and the research site. Reflecting on how my personal values may have influenced data collection and analysis, it is possible that there were some instances in which chosen themes was determined to a certain degree by my personal values and assumptions and especially by how I feel about technology. When I started this research study, I was interested in the issues that may help the

implementation of technology in the Syrian context and in other contexts, and believed that being able to teach and learn online is, to a large extent, a matter of positive attitudes towards technology and the ability to be creative and flexible. I did not completely agree with the views that discouraged the use of technology in language learning and which assumed that technology in itself is a predictor of successful online learning. Some findings from this study were in consensus with this assumption (for example, flexibility is required on the part of the teacher and the students).

If we look at reflexivity from the perspective of the researcher researched relationship, reflexivity refers to "a critical analysis of the relationships among researchers and participants." (John Wiley & Sons, 2003, 255), and the decision made through social collaboration with others in the research site. The concept of reflexivity in that sense is partially related to the role of the researcher. In this study, I consider myself as an outsider to the educational institution where the study was conducted in the sense that I had no authority over the provision of data because I was not part of the community researched, that is I was not a member of the teaching staff in the institution and had no experience in teaching neither in studying English online. Negotiating access to the environment was time consuming and a tedious process due to being an outsider. However, my cultural background as a Syrian postgraduate student helped me develop a rapport with and confidence teachers who took part in the study. Some of them were also postgraduate students which seemed to be the first step to connecting with them. My identity as a postgraduate student who is affected the way some students responded to my questions as they seemed to be comfortable with disclosing information to me. My impression was that being an outsider helped students disclose information that they would not have disclosed to someone who is

part of the institution (for more reflections on the research process see Appendix. J: Subjectivity and Reflexivity).

3.10 Ethical considerations

Cozby (2004: 35) stated, “Ethical concerns are paramount when planning, conducting, and evaluating research." The procedures for the protection of human participants were heeded as follows. All responses to the survey and to the interviews remained anonymous to all but this researcher. Only this researcher had access to the data entered by the participants and used for data analysis. Participants evaluated existing competencies/qualities of the online environment; although this was not necessarily sensitive information, participant's responses were kept confidential by removing names from materials. The researcher assigned a random numeric identifier to participants to ensure the anonymity of their responses throughout the research process. Finally, the initial contact email clearly indicated that the researcher would maintain participant anonymity indefinitely.

This study complied with the Syrian Online University ethical guidelines and presented minimal risk to participants as it contained neither experimental treatment of the participants nor exposure to physical or psychological harm. Great care was taken to ensure that the participants fully understood the nature of the study and the fact that participation was voluntary. No sanctions were applied if participants declined or withdrew from the study. No information regarding participation of any individual was communicated to the Syrian Online University. Confidentiality of data will be maintained at all times, and identification of participants was not available during the study nor will be after the fact. These conditions were communicated to all participants at the start of the study.

The ethical dimensions of research in online settings (Thomas, 1996; Cherny, 1999; Hine 2000; Mann and Stewart, 2002) have been much debated. As Hine (2000: 23) emphasised, "online interactions are sufficiently real for participants to feel they have been harmed or their privacy infringed by researchers." In this study, confidentiality and anonymity of the information obtained from the research was assured. Personal information of the participants was treated as sensitive and confidential.

All the materials and the sessions were the property of the Syrian Virtual University and a formal permission was obtained to use these materials . The sessions were public resources in the sense that they could be accessed by any one from the university website and no subscription or password was needed. According to Merriam (1998: 215) public records are open to anyone's scrutiny, and data are often in an anonymous form. This was not the case with the sessions in the present study, which were available on the university website. Consequently, all forms of identification were changed using Microsoft Paint before using any screenshot of the sessions in the study.

3.11 Data Analysis

Data analysis is "an ongoing process" (Taylor and Bogdan, 1984:128) that starts with and goes "hand-in-hand" with data collection (Taylor and Bogdan, 1984:128). In this study, throughout data collection, field notes and transcripts were read in an attempt to make sense of the data. The process of data analysis in this study followed two approaches. First, data from the questionnaires and interviews was analyzed with an inductive approach to make sense of it without imposing pre-existing views on the meaning. Second, with observation of sessions and interactive materials a deductive approach was implemented through the use of a checklist or

criteria derived from the literature presented in Chapter Two. The specific steps that were followed to analyse data involved the following stages.

3.11.1 Organising and preparing data for analysis. The purpose of the arrangement of the raw data is to organise the data from different sources into manageable formats. Different organisation systems can be followed in this stage. In the present study, the data collected were organized from each source (Web-based materials, observational notes from online sessions, interviews, questionnaires) individually into separate folders. Student interviews were transcribed using pen and paper and saved in a folder. The details of each interview such as name of the participant and their random numerical identified, date, and duration of the interview were recorded at the beginning of each transcript.

The data from automated materials was also organised. The data was saved in two documents. The first document included screenshots and comments that were relevant to the content of the materials (e.g. writing activities, grammar exercises and so on). The second document included screenshots and comments about the resources and tools that were integrated in these materials (e.g. library, forum, etc). The narrative and analytic description of these materials was based on and illustrated by the visual data and comments in these two documents (Ellis, 1997).

The first task with the questionnaires before coding was to pull the answers to the open-ended questions together. Questionnaires were organized by question then printed and coded using pen and paper. All the questionnaires were examined and the answers grouped under the related questions. For example, one of the open-ended questions was what do you like about the English course. This question was written on a separate page followed by all the answers given by the students to this question.

This technique made analysis of data easier to carry out as it allowed analysis to consider the answers of all participants for an individual question.

3.11.2. Holistic analysis. All recovered data was read through to observe the data from a holistic perspective. This assisted familiarity with the data and reflections on overall meaning. This process involved "conversing" with the data, asking questions, and making comments (Merriam, 1988:131). The process of data analysis of the interactive materials and observation data followed a deductive approach (top-down coding). The process of data analysis of the interviews and open-ended questionnaires followed an inductive approach (bottom-up coding). The procedures followed in each type of these analyses will be outlined in the following section.

3.11.3 Coding of observations and materials. The process of data analysis of the observations and automated materials was guided by the research objectives and the research questions. Themes related to these data were arrived at deductively. Coding categories were defined in advance (Stigler et al., 2000). This analysis process included using a criteria or a checklist (Ellis, 1997; Williams, 1983) and followed a process adapted from Hutchinson and Waters (1987, as cited in Zhang, 2007: 30)

Step 1. Defining criteria for examining the data by exploring the interactive materials and observation data. Criteria included the goals that characterize traditional and new approaches of language teaching in general, and CALL, in particular.

Step 2. Examining the data according to the defined criteria to decide to what extent the materials and online sessions achieved these goals.

The process of data analysis resulted in narrative and analytic descriptions of the interactive materials and online sessions. The analysis was later used to draw conclusions about the similarities and differences between individual study and working with the faculty.

3.11.4 Defining criteria. Defining criteria for analysing the materials and observation data (Mayring, 2000) was developed following a model of deductive application. The resulting step model was used in this study as a framework for deductive data analysis. Mayring (2000: 15) stated that the main idea of these coding procedures "is to give explicit definitions, examples, and coding rules for each deductive category, determining exactly under what circumstances a text passage can be coded with a category. Finally, those category definitions are put together within a coding agenda." The criteria included five categories: Feedback, Organization of the Lesson, Virtual Setting (e.g. technology used), Stage (teaching) Content and Goals, and Role of Participants (faculty, students). From the perspective of this criteria, the process of teaching and learning was viewed as " an integrated set of characteristics, including tasks, discourse, and particular roles for faculty and students" (Stigler, 2008: 137). These elements reflected assumptions about the way students learn and the proper role of the faculty (Stigler, 2008).

The criteria served as a framework to guide and interpret the analysis. During the analysis, the categories were presented in the form of questions about the nature of teaching as described by Hutchinson and Waters (1987, as cited in Zhang, 2007). Categories were used to compare and contrast the teaching aspects of the automated materials with the teaching processes of the online sessions.

3.11.5 Examining the materials and observation data. According to the defined criteria**,** two sets of data were evident: the interactive materials, and the

observation data from the online sessions. The analysis of these two data categories included two approaches. The first approach of the analysis was "a straightforward, analytical matching process" Zhang (2007: 30). This approach was used with the materials and involved exploring the different levels of proficiency and categorising of these materials according to the pre-defined criteria. This type of feedback is one of the characteristics of Behaviouristic CALL (underlying pedagogy). This judgement (categorisation) was based on a straightforward analytical matching of the materials with this element from the criteria. Screenshots taken in the data collection phase of the study were categorised simultaneously using the same framework.

Observation data and matching from the online sessions was not straightforward as it was more appropriate to use a simple observational coding scheme: first, top-down coding (Stigler, et.al, 2000), second, match the categories that result from coding with the elements from the criteria. This approach included using codes that were apparent themes in the related literature (an example about how Mayring's (2000) framework was used for analysing observation data can be found in Appendix. K: Analysis of the Materials and Observation Data).

3.11.6 Coding of interviews and questionnaires. Thematic analysis (Coffey and Atkinson, 1996) was performed on the data. Themes emerged through reading of the data, first on a descriptive level, and then on an analytical level. Coffey and Atkinson (1996: 31) stated that "we can start with a simple framework for coding based on what we as researchers are interested in. Reading through data extracts, one might discover particular events, key words, processes, or characters that capture the essence of the piece." The aim of this process was to condense the bulk of data into units that could be analyzed by creating categories with and from the data.

Coding of the interviews and questionnaires was carried out separately. The coding process was done manually and involved highlighting comments and essential points as well as writing notes to assist in the development of themes, categories, and subcategories. Questionnaires and interviews were coded separately in the sense that they were dealt with as two sets of data. Coding during this stage presented an initial organization and sorting of meaning that led to the next stage of data analysis subcategories were established (Lincoln and Guba, 1985; Robson, 1993).

The main categories are family codes that could include a number of related codes that shared common properties and revolved around the same dimension. For example, the social cues category involved the following codes: forming impressions of others, engagement in lesson, depersonalization, and turn-taking. Initial categories and subcategories were revisited and revised (Simpson and Tuson, 1995, as cited in Hoepfl, 1997). The family codes of the data from faculty interviews were reviewed to determine how far they converged with certain categories in the students interview data, and vice versa. The establishment of family codes (categories) in this way allowed reflection on the perceptions of both faculty and students of the opportunities and constraints of the online environment. The first set of categories related to the constraints of the online environment. The second set of categories related to the opportunities of the online environment. The data analysis process was considered an example of triangulation of the data (Silverman, 2001, Yin, 2003). After data analysis, reflection on the answer to the research question was possible as faculty and students perceptions of the opportunities and constraints of the online environment were evident (for more details about how teachers and students views were analysed and merged see Appendix. L: Analysis of the Questionnaires and Interview Data).

3.12 Validity and Reliability

Establishing the validity and reliability of the instruments and data collection and analysis processes is important in terms of lending creditability to the research process. Face validity is established based on the instrument producing results that will indicate that the test is reliable and can be replicated. In terms of reliability, the survey questionnaire for students was tested on none students outside of the population group as a means of determining any possible reporting errors (Creswell, 2012). The structure of the interview questions allows other researchers to complete the same study and to follow the same protocols. Reliability of the process has a less significant role in the qualitative process, but remains a necessity (Leedy and Ormrod, 2001). The process of establishing a replicable process for the collection of data is critical (Creswell, 2012). Creswell asserted that validity means the acceptability of the data as credible and reliable. The data should produce the results the survey was designed to produce (Golafshani, 2003).

The online educational resources and materials in this study were derived from the online institution website, which is a location within the web where online teaching and learning takes place. This website is the property of the Syrian Online University and only this institution can make materials and resources available on this website. The site has password for some of its contents, and only authorised people can access these parts, such as the online sessions, and be admitted. This reduces the likelihood of deception and increases the authenticity of the data collected.

In fixed designs that are based on positivistic approaches to knowledge, four tests are used to judge the quality or the goodness of studies: objectivity, reliability, generalisability, and internal validity. Some researchers in social sciences try to imitate these positivistic standards, which were introduced from natural science, by trying to control all the variables in their studies. This application of positivism in

social science might be suitable for studies that follow a fixed design. However, qualitative research is actually based on different logic, assumptions, methods, and goals. Lincoln and Guba (1985) suggested alternative criteria for a rigorous interpretive study: credibility, transferability, generalisability, and dependability, thus reassigning the positivistic terms in an intuitive and global definition more satisfying to qualitative inquiry, and specifically to constructivist-based inquiry. These terms and their associated concepts and research procedures were considered as relevant in the present study, which adopted the interpretive approach within the constructivist epistemology.

3.12.1 Confirmability. Traditional studies based on a positivistic paradigm try to achieve "objectivity," which refers to the degree to which the researcher can demonstrate the value-neutral inquiry where the interpretations are free from bias or prejudice. This criterion cannot be applied to constructivist, interpretive research, because this research is naturalistic and therefore has different ontological assumptions (Guba and Lincoln, 1989). These assumptions state that there are some types of knowledge that can be only gained through a dialogue with individuals in the research context, leading to socially constructed realities and interpretations as opposed to the objective reality that traditional inquiry seeks to achieve. Hence, it is an erroneous belief that the researcher in naturalistic inquiry can, or should be, a totally neutral or remote observer. From a constructivist perspective, objectivity is then replaced by "confirmability," which can be achieved by "assuring that data, interpretations, and outcomes of inquiry are rooted in contexts and persons apart from the evaluator and are not simply figments of the evaluator’s imagination" (Guba and Lincoln, 1989: 242). A need exists for assertions in interpretive research to be "trackable" by leaving an audit trail (Merriam, 1998: 207).

To help satisfy the confirmability of this study and track the researcher's practices and assertions, a confirmability audit was constructed where the researcher kept a full record of (a) raw data, (b) preliminary developmental information which were recorded in the researcher's journal, and (c) notes and details of the coding process and analysis (Guba and Lincoln, 1985; Robson, 2002). These techniques were used to render the research process as trackable as possible. The processes and practices and any interpretations or assertions made in the study were, therefore, made explicit at all stages of the research.

3.12.2 Dependability. From a qualitative, constructivist perspective, the traditional reliability criterion for a rigorous study is replaced by dependability (Lincoln and Guba, 1985). Reliability refers to the use of standardised research instruments such as formal tests and scales and if the tool or instrument produces consistent results (Robson, 2002, 176). Some case study methodologists try to imitate this positivistic view, observe reliability in terms of stability of data over time. Yin (1989:45) observed "in accounting and bookkeeping, one is always aware that any calculations must be capable of being audited. In this sense, an auditor is also performing a reliability check and must be able to produce the same results if the same procedures are followed." This view follows directly from the ontological assumption that "scientific inquiry is not problematic; it is the naturally sanctioned way to determine the definitive and enduring truth about states of affairs" (Guba and Lincoln, 1989:103). This ontological assumption cannot be applied to constructivist inquiry where the resulting constructions are subject to "continuous refinement, revision, and if necessary replacement" (Guba and Lincoln, 1989:104). In interpretive research, many of the methods used for generating data are not standardised (Robson, 2002). Dey (1993: 251) emphasised "if we cannot expect others to replicate our

account, the best we can do is to explain how we arrive at our results." In Manson's (1996) view the researcher should be able to trace the route through interpretation was followed.

3.12.3 Transferability. This term is used by Guba and Lincoln (1989: 241) as parallel to generalisability (or generalisation) in fixed design research or to external validity (Yin, 1989; Robson, 2002 :). The methodology literature refers to three types of generalisations: statistical generalisation, analytic generalisation, and naturalistic generalisation, the latter of which is the type of generalisation this study reflected. Naturalistic generalisation (Stake, 1995) is associated with qualitative research of single cases (Eisner, 1990:183). This notion of naturalistic generalisation was described by Guba and Lincoln (1989) as a description of transferability or in terms of Patton's (1990: 489) idea of "extrapolation," or in terms of Eisner's (1990) conception of experiential knowledge. Naturalistic generalisation becomes a form of retrospective generalisation that leads to the understanding of past and future experiences in a new way. This experiential knowledge in qualitative single case studies is different from knowledge acquired in other research designs in the sense that it is a kind of "working hypothesis" (Lincoln and Guba, 1985: 316) that has not been translated into propositional form. In qualitative single case studies the "transferability of these hypotheses to other situations depends on the degree of similarity between the original situation and the situation to which it is transferred" (Lincoln and Guba, 1985: 316). The researcher cannot specify the transferability of the findings to other situations, and therefore the external validity of an inquiry. Rather the researcher can only provide sufficient information and description of the time and context of the inquiry. In the present study, single case study methodology offered me a means of investigating a complex entity (the online environment) and

permitted me, as the researcher, to develop naturalistic generalisations and conclusions that enable people to learn from the single case either for themselves or for applying the case to a population of cases (Stake, 1995:85).

3.12. 4 Credibility. The credibility criterion may be thought of as parallel to internal validity. Eisner (1990: 126) compared the two concepts by stating that "validity serves most often as a gloss for scientific accuracy among those who identify closely with science and for correctness or credibility among those who do not." The credibility of qualitative research depends on the ability of the researcher to present multiple realities in the research and the richness of the information regardless of the sample size (Patton, 1990). The following steps were taken in the present study to enhance the credibility of the study: (a) prolonged engagement in the field, (b) persistent observation, (c) peer debriefing, (d) negative case analysis, (e) referential adequacy, and (f) member checks (Lincoln and Guba, 1989: 301).

3.13 Triangulation

Data triangulation is important in quantitative research as the technique helps establish reliability and validity during data collection and analysis (Creswell, 2020; Denzin and Lincoln, 2003). Triangulating data validates the responses received using multiple data collection processes (Jick, 1979) and to overcome biases and problems that might arise from a single perspective. Taylor and Bogdan (1998) argued triangulation validates insights gathered from different sources of data and from different participants. Hale, Treharne, and Kitas, (2008) and Jonsen and Jehn (2009) found that when issues are explored from several perspectives, triangulation enhances the validity of the research effort. Shank (2006) maintained that stronger evidence of the validity of the findings results in higher confidence when different perspectives are woven together, as in the present study.

In the present study the term triangulation was used to refer to the use of different data collection techniques: interviews, observations, and materials, as well as data depicting different perspectives of faculty and students. The purpose of this triangulation was to facilitate a deeper understanding of the phenomenon under study and to make assertions regarding the nature of the target phenomenon. Triangulation strengthens credibility and dependability, which are parallels to reliability and internal validity (Merriam, 1998:207). The descriptions and interpretations in the present study were used to emphasise the voices and actions of participants and to construct meaning or social reality (some examples about how interpretations and conclusions were reached can be found in Appendix. M: Interpretations and Conclusions).

3.13.1 Audit trail. As the term implies, in this technique, the researcher maintains written details about different aspects of the research process. This technique can be of great value, particularly in qualitative research, as it assists the researcher and assists with the issue of credibility and threats to validity (Merriam, 1998; Robson, 2002). Robson (2002:176) reported "whereas in traditional fixed design research (particularly in true experiments) threats to validity are essentially dealt with in advance as part of the design process, most threats to validity in flexible design research are dealt with after the research is in progress, using evidence that you collect after you have begun to develop a tentative account." This technique was implemented in the present study in several ways:

1. A personal journal of the procedures and issues related to the research was used by the researcher to aid the description of the research process with careful documentation of research activities.

2. The use of researcher journal of the activities of the research (Yin, 1989:41) was implemented.

3. A data base was developed. This included raw data such as observational notes and recording, audio taping, transcripts of interviews, materials, and documentation of the coding and other data analysis procedures.

4. Commentary about the researcher's personal thinking and position regarding the base and logic of the decisions taken. This approach involved justifying the judgements made throughout the research process and decisions made during social interactions.

3.13.2 Peer-debriefing and member check. In addition to the audit trail and the techniques described above, two other techniques were used to ensure that results were dependable: member check, and peer-debriefing. Member checking has two types: formal and informal. Member check is recommended in qualitative research to give power to the voices of the participants. Member check, as done in the present study, involves asking participants, either face-to-face or through distance communication, to comment on transcripts and interpretations (Lincoln and Guba, 1985; Merriam, 1998; Robson, 2002; Stake, 1995). Participants are offered an opportunity to provide critical observations and feedback and help triangulate researcher interpretations (Stake, 1995). This activity demonstrates to the participants that their perceptions and contributions are appreciated (Robson, 2002). Stake (1995) recommended that the participant be "asked to review the material for accuracy and palatability. [He or she] may be encouraged to provide alternative language or interpretation, but is not promised that that version will appear in the final report." Similarly, Lincoln and Guba, 1985: 314) agreed by stating "clearly, the investigator is not bound to honour all of the criticisms that are mounted, but he or she is bound to hear them and weight their meaningfulness." This tactic is considered to be the most essential technique for establishing credibility (Lincoln and Guba, 1985:314). In the

present study, member checking happened during the unstructured interviews when an immediate validity check was performed on student and faculty responses. Member check of the interpretation of data was not possible due to limited access to faculty and students.

Peer-debriefing involves academic discussions with other researchers interested in the research field and engaged in similar research inquiries. They can have valuable insights and can help guard against researcher bias (Robson, 2002). In the context of the present study, an article based on this study was published in one of the working papers volumes published by the University of Warwick in England where the study was offered for reaction to the work by one a colleagues of the researcher. In addition, dissertation supervisors assessed and commented on the different phases of the research and on the findings, interpretations, and conclusions through frequent meetings and email communications.

3.13.3 Negative case analysis and variation within the data. Negative case analysis is a technique to guard against researcher bias (Robson, 2002; Lincoln and Guba, 1985). In this study, the objective of using this technique was to ensure the researcher's subjectivity did not skew the analysis process and findings. The technique involves searching for instances that are not consistent with the interpretations until all known cases are accounted for in the data with no exception (Lincoln and Guba, 1985). This practice is necessary because it "forms the basis for analytic induction and negative case analysis. Negative case analysis requires that the researcher looks for disconfirming data in both past and future observations. A single negative case is enough to require the investigator to revise a hypothesis" (Lincoln and Guba, 1985: 310). Attention was paid to locating instances in the data that did not conform with the preliminary findings and interpretations. The raw data was

reviewed and consulted numerous times during this process. When there was variation within the data, the conclusions were based on the data, but the judgements made were more speculative.

3.14 Summary

This chapter was a recitation of the method of data collection and the design of the study. The setting and population were described, the process through which resulting data were analyzed to answer the research questions was summarized, and ethical considerations concerning the use of human subjects was defined. The following chapter is a recitation of the results.

Chapter 4.0 Findings from Observations

The purpose of this qualitative case study investigation was to determine if an online environment could support English language learning in the Syrian Virtual University. The online environment provided a natural setting in which to explore the complex dimensions and characteristics by observation and by probing student and faculty perceptions, attitudes, and lived experiences. Opportunities and constraints at the Syrian Virtual University concomitant with the online environment used for English language teaching and learning were explored. The extent to which an audio-graphic conferencing environment was implemented for the delivery of interactive Web-based materials supporting English language teaching and learning from a constructivist learning perspective was also explored.

Results in this chapter concern the nature of the online environment and how this environment was used by faculty and learners in the English programme. Delivery of educational content took place in two formats. The first format was in the form of interactive online materials available on the web for independent study. The second format of delivery was in the form of teaching these materials in synchronous online classes through audio conferencing. These two formats of delivery were observed at independent times. The first level of concern was the nature of the online environment components such as the materials, resources, and technology used to conduct the online sessions. The second level of concern was the use of these components during the sessions. Discussion of findings and conclusions drawn from them will be found in Chapter 6.0.

4.1. Typical lesson structure

The online sessions observed shared a typical structure that started with a session overview followed by at least one sequence of teaching and learning activities

or events focused on a specific pedagogic goal, which was then followed by a session ending. The stages in the lessons involved the faculty and students working on language learning tasks. The word task in this discussion is used in a broad sense to refer to any language activities that took place at a particular time within any of the stages. It will also be used to refer to the automated activities in the online materials that were based on computerised interaction. To examine the nature of the online environment and the extent to which this environment supported learning, it was important to understand how English was actually taught. Hence, the tasks were analysed in terms of their pedagogic content and of what both faculty and students did during them.

4.1.1. Overall structure. Lesson beginnings included events such as greeting students, making sure students could hear well and dealing with technical issues as well as introducing the lesson by telling students about the topic or the theme of the unit and the language skills and areas that would be covered. As well, comments were offered about student homework, assignments, or attendance. The lesson then took place. Lesson ending included events such as referring to what had been covered in the session and commenting on the content, date and/or time of the following session. Students were asked to prepare for the next lesson and if they had any questions. Students were asked to send an email if they had questions after dismissal. In many cases, the faculty explicitly ended the session by announcing that a certain task was going to be the last task in the lesson or by making finalizing finishing comments such as "I have to stop here," "I have to end the session," "We have finished," or "I have to stop now."

4.1.2. Lesson stages. All lessons tended to be structured around one stage or a number of discrete stages. Lesson stages started at the point when class events

seemed to focus on a certain pedagogic goal in terms of teaching language as a system or as a skill and involved a precise set of activities, events, and pattern of interaction. While some stages were often clearly identifiable because they were focused on one element of the language such as reading, grammar, lexis, or another element, or on a related set of tasks that had beginnings and endings. Other stages were more complex as often included more than one pedagogic goal where one element of language came into play within the context of teaching another element. When the stage included more than one language element, the stage was labelled depending on the pedagogic focus of the main element in the stage or the element that seemed to be emphasised.

The beginning of a stage was determined by the fact that the session beginning had finished and that the faculty tended to start the stage by making comments that indicated that the lesson would start. The language-focus areas included the teaching of grammar, lexis, and pronunciation, while language skills included reading, writing, and fluency in written communication. In the reading stage, the activities involved reading a text followed with comprehension questions and a range of tasks about language points where students had to discover certain language concepts and features. The reading comprehension included questions that required the general gist understanding of the text. It also included questions that required more in depth and detailed reading. New or unfamiliar words in the reading texts were linked to a reading reference with a list of vocabularies where students could find definition of these words in their specific context.

The lexis and grammar stages included working on main grammar or lexis areas and on exercises specifically related to the grammatical rule or grammar concept being taught in the present lesson or in a previous lesson. The grammar stage involved working on some grammatical areas and features that emerged from the

reading stage. The grammatical areas and features typically included areas such as tense, modality, the article system, noun phrase construction or others as well as syntax issues such as common verb patterns. The grammar practice exercises helped students practice the grammatical points covered. These exercises included matching, sentence and text completion, sentence transformations, or error recognition. In addition, teaching grammar in the grammar stage sometimes involved the use of a grammar reference that was integrated with the materials. The reference was used when working through grammar sections by clicking on the related link at the top of pages. The reference was used to refer to grammar rules and to access more explanations and examples of the topics and grammar points under review. The lexis stage involved teaching vocabularies from the reading texts and deducing their meaning from the context. Teaching of vocabularies covered areas such as word families, collocations, and word formation. Typical exercise types include matching, multiple choice, and gap-filling.

4.1.3. Teaching writing. Teaching of writing included working on exercises intended to prepare students for the writing task. It involved working on areas such as exercises about facts and opinion, topic sentences, the use of "and," "also," "but," or "so." It also includes the study and imitation of a model (e.g. a letter). The writing stage also involved teaching students how to compose their writing, use topic sentences, and how to edit their writing.

4.1.4 Teaching pronunciation. Pronunciation was not taught in a separate stage. Although the educational materials included a pronunciation section that was focused on teaching phonetics, individual sounds, pairs of sounds, learning word stress and syllables, connected speech, intonation and others, these materials were not taught in the online lessons. Rather, teaching pronunciation took place within the

context of teaching other tasks. It took place within the context of teaching reading lexis, and grammar. This was in the form of feedback when faculty asked students to read a passage or a sentence, then corrected their pronunciation, showed them how to read the sentence using the correct intonation, or showed them the pronunciation of certain words.

In Observation 9, while working on the reading section, the teacher asked one of the students to read the passage, and then corrected his pronunciation of two words. The following example is cited from field notes:

> The teacher asks the same student to continue reading. He reads the second section. She corrects the pronunciation of the word "blameless." She corrects the pronunciation of another word. (Observation 9

In Observation 11, the teacher showed students the pronunciation of certain words as part of teaching within the context of teaching them compound words in the lexis stage:

> Now the teacher does the next one. She reads: We use it to dry the clothes. (Student name) says it is clothes dryer. The teacher says "excellent, Fadia. We call it clothes drier". The teacher shows them the correct pronunciation of the word "clothes" and compares it with the wrong pronunciation. She also comments on the spelling of the word "dryer". She tells students that this word can be spelt in two ways "dryer" and "drier." (Observation 11)

In addition, during the reading stage in Observation 7, the teacher showed students how one of the words in the texts was pronounced differently in British and American English:

> The teacher reads the first sentence and asks students which one of the three choices they think is true. A student gives an answer. The teacher thanks him and clicks on the right answer. He then moves to the next sentence. He reads the sentence then does it. He sometimes refers to the text to check which of the three choices the correct one is. One of the sentences has the word advertisement. When the faculty reads the sentence, he tells students that this word is pronounced differently in British and American English. He pronounces the word for them with both accents. (Observation 7)

Furthermore, during the grammar stage in Observation 3, the teacher taught students how to use the intonation with certain grammatical structures to convey certain feelings:

> Another student gives an example. The teacher comments on the sentence suggesting that the tone should show that the person is complaining and annoyed. She tells them that it would be better to use the simple present if the tone does not show that the person is annoyed. (Observation 3)

4.3 Online materials and sessions

Teaching and learning in the online environment involved interactive online materials (or a Web-based environment) that were intended for students to use as part of their independent study. It also involved the delivery of synchronous online lessons that were conducted through an audio conferencing system. Observations of the online environment included (a) observation of the interactive online materials (or the Web-based environment), and (b) observation of the online lessons. These two observations took place at independent

4.3.1. Online materials. The online materials (or a Web-based environment) were interactive materials intended for self study in the Web-based environment. The findings reported in this section concern the data collected from the observation of this Web-based interactive environment. Tasks in the materials in this environment fell into two groups. The first group contained tasks that required written social interaction with other students and focused on the use of the target language. The second group contained tasks that focused on learning structural knowledge (e.g. forms, functions and meaning of an item) of the target language as well as on developing skills such as reading and that were designed to be carried out through computerised interaction in the Web-based environment. The second group involved

tasks that required written social interaction with other students and focused on the use of the target language.

4.3.2 Material design and computerised interaction. The majority of tasks in the online materials were based on computerised interaction and were of the controlled practice type that shared much in common with the principles and norms of behaviouristic pedagogy rather than with new approaches in learning. This category of tasks was based on computerised feedback, memorisation, and pattern reinforcement. The purpose of the tasks, which were designed to be carried out through computerised interaction with the online materials, was to have students remember/memorize the right answer through pattern reinforcement. These tasks included a range of drill-and-practice activities and exercises such as accuracy practice activities, form focused practice activities, receptive practice activities, and productive practice activities. The primary focus was on form of specific linguistic content and on a fixed set of word form and rule usage.

4.3.3 Behaviouristic activities. Students were also expected to engage in certain self study outside of class session. Observation of these sessions was not possible. Exercises were closed with only one possible answer. An instant response by the computer program indicated if an answer was correct or incorrect. When students input the correct answer, they received positive automated feedback that indicated that the input is correct. This feedback included responses such as "correct," "well done," or "congratulations. If the answer was incorrect the student was told the input was "incorrect" or "wrong" and prompted to try again (Figure 9).

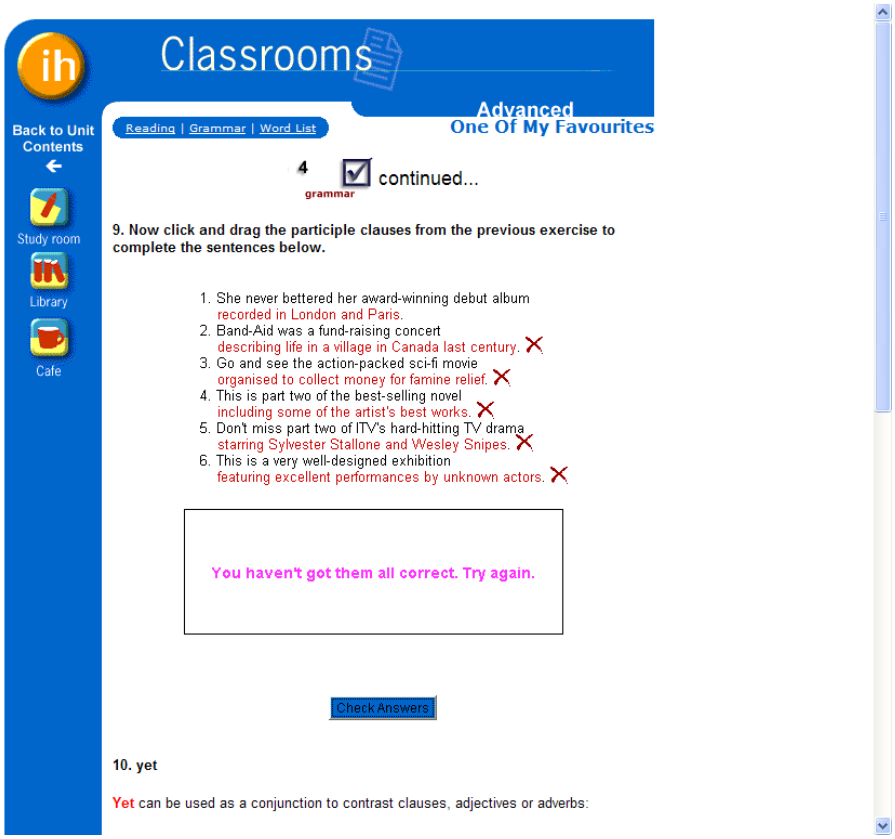

Figure 9. Sample screenshot of wrong input with a prompt for a second attempt

This learning process that includes rewarding students for providing a correct answer is not consistent with the principles in language learning that "avoids telling students that they are wrong, [and] does not reward [them] with congratulatory messages, lights, bells and whistle" (Underwood, 1989, as cited in Murphy, 2001). Prompting students to take multiple attempts to select the correct answer before moving to the next question or exercise means that the task at hand should be completed before proceeding to the next task or question. If the students fail to enter the right input after several attempts, the computer provides them with feedback. Feedback usually indicates which answers are correct, and would correct wrong answers, but would not include any indication or any further explanation as to why the answers were correct or incorrect.

Other behaviouristic activities included practice activities aimed at written production that require memorization of vocabularies, expressions, phrases, and sentences. The written productive-practice activity often depends on gap filling where students need to write the correct word or missing information. In one of the review sections, for example, students were asked to read a text and then reconstruct the text from memory by filling in gaps with the correct words. In a similar exercise, students were encouraged to memorise grammatical items and expressions and depended on their memory.

In addition to the reproduction of language through memorization and the repetitive nature of the drill, behaviouristic principles seemed to be further reflected in the language drills that helped students achieve the correct use of language structure. In these drills, students were provided with a model or an example that focused on the same language point under review and were encouraged to imitate this model and to generate a similar product. This approach depended on reproducing the language through memorization of lexis, grammar, and other language items, which is in line with the behaviouristic philosophy that considers the learning process as "an intellectual activity involving [among other things] the memorisation of rules and facts related to the first language" (Stern, 1983: 452).

4.3.4 Material design and social interaction. The online materials website offered students opportunities for written communication and discussion, which has many advantages in terms of learning outcomes such as developing fluency in writing and promoting critical thinking. The online materials included activities that focused on meaningful social communication that needed to be carried out in a way where students could interact with each other rather than with the computer. Each unit in these materials included a message-focus practice activity that encouraged a written

dialogue among students. These student-centred activities were structured in the sense that they required students to think about certain issues and then post their contributions and opinions on a notice board. In one of these activities, students were asked to weigh the pros and cons of having the Olympic Games in their cities, to support their argument convincingly, and then post their contribution on the notice board. Students were also encouraged to read each other's work and respond to it.

In addition, the online materials were integrated with tools that provided avenues for social interaction where students had the opportunity to use the target language in a meaningful and communicative way. The materials are integrated within an online study room that offered access to a chat room and a notice board for both synchronous and asynchronous written interaction. The chat room could be used for exchanging written messages and text based chat in real time, which was designed to improve their writing fluency. The notice board was used for posting thoughts, ideas, and contributions, and for student-student and faculty-student written interaction. The exchange of written messages and comments through the discussion forum or the notice board was intended to help students develop their writing skills, critical thinking, and negotiation skills.

The communication among students in this virtual venue was supposed to be facilitated by the faculty who were intended to encourage the discussion and provide students with personalised feedback. However, during observation of the online environment, this virtual space was not accessible by the researcher. Faculty members commented that this venue was not activated , meaning the discussion forum was not used in the course for carrying out interactive activities and written communication during the timeframe of the present study.

4.3.5 Content of the online lessons: fluency vs. accuracy. While the interactive online materials described provide opportunities for independent study, these materials were used within the online lessons. In the online lessons faculty used two strategies for teaching these materials. The first strategy involved faculty and students working on the controlled practice tasks that required specific knowledge and relied on learning the language through the drill-and- practice type of learning such as gap fill activities and choosing the correct answer from a list. Faculty in most of the online sessions that were observed focused on teaching automated non-communicative activities where students were engaged in interaction with the automated materials. These activities required specific knowledge and relied on learning the language through practice, repetition, memorisation, and automated feedback.

The majority of lesson content consisted of a category of tasks that relied on the one correct answer, and where students were guided by the faculty to this correct answer through faculty led interaction. About 97% of the time of the 10 lessons observed was spent on drill-and- practice tasks. When students succeeded in giving a correct answer, they were praised by both the faculty and the computer.

The faculty responses to accuracy or inaccuracy included such comments as "no," "wrong," "do the others know," all of which were commonly used in the sessions. The following extracts show examples of both cases. Faculty responses in the first two extracts involved telling students they were wrong, while in the following extract the teacher asked if any of the other students could help, or asked if anyone could help the student who was doing the exercise when the mistake was made:

> The teacher asks (the student) to do another sentence. The student uses the control and chooses the form from the drop down menu. The teacher says that the answer is wrong. (Observation 7)

(The student) gives an answer. The teacher tells him that his answer is "wrong." (Observation 2)

> Faculty nominates a student (A) and tells her to do the first sentence. The student tries to click and drag the word to the right place, but fails to do so. She dragged the word to the wrong place. The teacher asks other students to help her (the student). The student now has managed to do the sentence. The teacher thanks the student and tells her that that is nice. (Observation 3)

The above extracts show faculty control of the language used in the lesson, of the answers given, and the focus on the accuracy of answers. There were tasks that required freer use of the language conducted through faculty-led interaction, but focused on discussion and authentic communication that conveyed meaning rather on giving specific answers. In the latter case, the faculty would turn the non-interactive activities in the materials into discussion activities. This happened, for example, in Observation 1 where the teacher exploited the topic and title of the reading task "stop this deadly game" to stimulate discussion between students. The teacher used the discussion to introduce and contextualize the topic of teenager's behaviour in a reading task, which was followed by a number of exercises and tasks thematically linked to the topic. The discussion was also used to assist students in developing specific communication skills such as arguing, persuading, or defending a particular point. During this discussion, the teacher encouraged students to interact with her and told them they could develop their fluency by interacting with her through text chat. She used open questions and authentic language and dialogue to communicate with them when she introduced the topic of the unit. Figure 10 shows how she exploited the reading task. The associated observation noted:

> She says that most teenagers do not have any responsibility. Some student (a student?) does not agree with her. She says let's have a debate between those who think that most teenagers do not have responsibilities, and those who think that this is not the case. She asks students to use text chat to support their opinions…She encourages students to keep typing answers for her and

says that this helps them develop their fluency. She says they are speaking in a written way so this is a very nice practice of their fluency. (Observation 1)

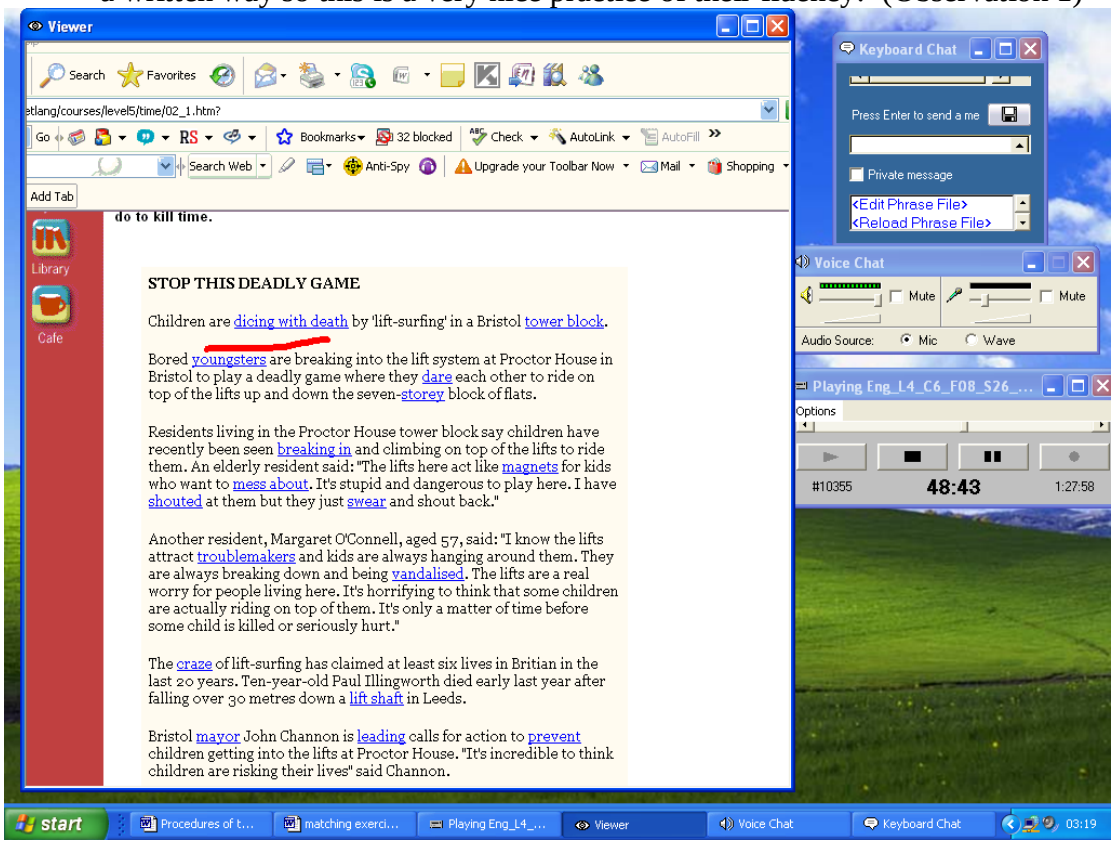

Figure 10. Sample screenshot: Teacher exploits the reading task to initiate faculty-led discussion

The observation note also added:

> She says that those irresponsible silly children do silly things, and asks students to give -her an example of the bad behaviour some teenagers do. … A student says that they watch TV in bed. She says that that is right, they watch TV in bed. A student says that they stay late at night. She corrects the lexis of the student. She asks him what he exactly means by saying "stay late at night". She tells him that he cannot use only stay. He has to use either stay up or stay out which have different meanings. (Observation 1)

When carrying out these discussion activities there was tension between the use of the discussion for authentic communication and fluency on the one hand, and a tendency for correcting student mistakes on the other. When using activities such as discussions in the language classroom, direct correction of mistakes has been found to be inadvisable because students cannot concentrate on conveying meaning while also

concentrating on using accurate utterances. This seemed to be the case in the online sessions.

These extracts not only illustrate an example of the use of text chat for communication and discussion, but how the faculty corrected student's lexis directly while eliciting language from them. In addition although the faculty used open questions where students had the chance to use the language in a less controlled and restricted way to express their opinions, ideas, and meaning, faculty did not seem to accept all answers, but tried to guide the discussion to specific answers as shown in the next observation.

> She asks students to give her an example of the bad behaviour some teenagers do. Student starts to give her answers. A student says that sometimes these teenagers they have their meals in bed. She says that that is correct…A student says that they cry a lot. She says that this is not quite right because we are talking about teenagers not babies. A student says that they watch TV in bed. She says that that is right, they watch TV in bed. (Observation 1)

On another occasion (Observation 9) where the interaction between the teacher and the students took place in a less controlled and restricted way, the teacher used the dialogue in her first lesson to give students a chance to introduce themselves and to collect some personal information about their hobbies, study, interests, and other personal information. The pedagogic focus at this part of the lesson, however, tended to be on linguistic competence and correction of mistakes rather than on communicative competence and fluency. The following extract illustrates how the teacher used authentic communication with students, but also how she corrected student lexis and grammar explicitly during a discussion that required the use of the target language freely and communicatively to express ideas and meaning.

> The teacher asks the students to introduce themselves by writing some personal information…She tells them that she would like them to write full sentences … Some students have started now to introduce themselves. They give their name, their age and where they work and what they study and what

> their hobbies are etc… The teacher comments on what each of the students has written. She asks one of the students for example about his hobbies. He tells her. She asks a student if one of the people she knows is her relatives she notices that they have the same surname. A student says that they like to watch movie. The teacher asks them about the last movie they watched. One of the students says she works as a teacher. The teacher asks her what subject she teaches. The student says she teaches computing. The teacher says that she will ask her for help when they have any technological problem (the teacher jokes with the student). …the teacher sometimes corrected students' lexis and grammar (e.g. she corrects "My hobbies are" and writes "my hobby is" instead). (Observation 9)

In the two occasions described above, although the interaction required freer use of the language than the interaction in controlled practice tasks, and although the discussion was used by both faculty to stimulate authentic communication, the tendency in both occasions was to correct student mistakes explicitly and directly, which does not seem to be consistent with the communicative aim of developing student ability and skills to use the language to communicate and convey meaning. Faculty-led discussion took place on two occasions, or about 3% of the total time of the 10 lessons observed.

Focus on accuracy in the online lessons was also observed in the way audio chat was used in the online lessons. When verbal interaction between students and faculty took place, the focus in all sessions observed was on teaching pronunciation and correction of phonological mistakes rather than on fluency in speaking. On some occasions, correction of mistakes in pronunciation and intonation took place within the context of other tasks such as reading and lexis. This was in the form of feedback where the faculty asked students to read a passage or a sentence, then corrected their pronunciation. In Observation 9, while working on the reading section, the faculty asked one of the students to read the passage and corrected his pronunciation of two words:

> The teacher opens to the passages and asks if any of the students can read. A student (A) says he cannot. She asks another student (M) if he can read. She gives him the microphone and asks him to test it first. The student then starts to read the passage…The faculty asks the same student to continue reading. He reads the second section. She corrects the pronunciation of the word "blameless". She corrects the pronunciation of another word (not sure which word). She then thanks the student. (Observation 9)

While the faculty in the previous observations corrected pronunciation, the teacher in Observation 3 corrected intonation. In the following drill from Observation 3, the teacher told the student that she (the student) said the sentence with wrong intonation. The teacher then read the sentence again in a more phonologically correct form and asked the student to repeat after her:

> She (the teacher) tells them that it is important in this exercise that they say the sentence in the right way… She asks them again if anyone of them has a microphone because she would like them to read the sentence. A student says she does. The teacher transfers the audio control to the student and asks her to go ahead and read the sentence… The student reads the sentence. The teacher says: no that is wrong …She then reads the sentence for the student and asks her to repeat after her. The teacher then asks the same student to read the next sentence. The student reads the sentence. The teacher gives her feedback on her intonation. (Observation 3)

Each of these extracts show how audio chat (i.e. the microphone) was used for student correction through the use of drilling and repetition of correct utterances (pronunciation and intonation) rather than for building confidence and developing fluency in speaking. What characterised the interaction in the online lessons regardless of the type of task a focus on teaching accuracy as opposed to meaning and communication.

4.4 Technical issues and the use of audio chat for teaching fluency

The primary constraint encountered during lesson observation was the technical difficulties that faculty and students had to deal with when they tried to use audio chat. Although students had opportunities to use audio chat in most of the lessons observed, on many of these lessons the use of the audio chat was hindered by

technical problems. It was common that one or more of the students in the class or even for the faculty to experience technical difficulties during the session (e.g. during faculty-led discussion of Observation 1, during the reading stage of Observation 1, during the grammar stage of Observation 3, during the grammar stage in Observation 4, during the reading stage in Observation 6, during the grammar stage in Observation 8, during the reading/pronunciation stage of Observation 9, during the lexis stage in Observation 10, and during the lexis stage in Observation 11). The following extracts typify the type of difficulties students and faculty experienced. One of the typical difficulties included students not being able to hear the voice:

> The class now moves on to work on the reading text. A student complains about the voice. The teacher tries to fix the problem asking the student to let him know when the situation improves. The student says that he still can't hear well. The teacher tries to refresh the audio and video for all students, and then asks students if the voice is better now. The student says it is fine now. The teacher starts to read the text. (Observation 6)

The same problem also occurred in Observation 6:

> A student complains about the sound. The teacher asks what is wrong with the sound and if the student can hear her. The student says that he can hear a noise. She apologises to the student and says it might be from the connection. She asks him to try to log out and in (the teacher communicates with this student using text chat and voice chat as the voice is not clear for him). (Observation 6)

A less common difficulty was related to students not being able to see what was written on the whiteboard. In Observation 8 two of the students in the class were not able to hear the teacher neither see the viewer:

> The teacher gives (the student) the control and asks her to type the answers in the blank. He helps her with the spelling and praises her when she types the correct word. She is the only one who is working with the teacher. It seems that the other two students still have technical problems. The teacher comments that the other two students in the class do not have audio or video, asking them to let him know if they can hear him. (Observation 8)

Another difficulty included the students not being able to use the microphone. In Observation 8, while working on the reading task, the teacher asked one of the students to read the passage aloud but the student did not seem to be able to do that:

> Then the teacher asks (the student) if she can use the audio to read out. He gives her the microphone (the student does not read. It seems that he is not able to use the microphone). The teacher asks her to type instead. She types the answer and he praises her. When she finishes the teacher thanks her. (Observation: 8).

Other difficulties included the faculty not being able to access the online materials. In the following extract the materials website was very slow and it took the teacher about 5 minutes to access the website:

> Teacher tries then to move to the next part of the material but the website is very slow. She waits for a few minutes but the page does not open. After about 5 minutes she gives up and moves to teach students from the additional materials. (Observation 3)

While on some occasions faculty dealt with the problems successfully, on other occasions they did not seem to be able to do anything about problems. In Observation 9 during a controlled practice exercise, three of the students in the class had technical problems. The teacher recognised the problem and commented on the situation, but did not seem to be able to do anything about it so he continued the lesson with the rest of the students in the class:

> The teacher now is working on another matching exercise. These exercises are on tenses. This time students have to identify the tense of each one of the sentences. Teacher attaches numbers to the sentences. There are three students in the class now. Two students (W and S) do not have view port, audio and video. The teacher asks them where they are attending from. He comments on the problem then continues the lesson. (Observation 9)

The problems mentioned above regarding the use of the audio chat were due to a slow internet connection. Sometimes the difficulty in using audio chat was because students did not have the required equipment (a microphone) rather than to problems with the Internet connection. In Observation 3, two students were

nominated to read out the sentences during the grammar stage, but they were not able to read because they did not have a microphone.

> The teacher chooses another student (Mu) to do the next sentence. She asks him if he has a microphone. The student says he doesn't. The teacher gives him the control instead so that he can drag the word to the right place. When he finishes the teacher thanks him (not all students have microphones with them). The teacher then nominates another student (K). She asks him if he has a microphone. He tells her that he doesn't. The teacher gives him the control and asks him to drag and drop the word to the right place. When he finishes the teacher asks him to do another sentence. While students drag and drop words the teacher shows them how to read the sentences with the right intonation (she reads the sentences for them). (Observation 3)

Offering students opportunities for communication is a key factor in successful language learning. It is commonly agreed that the use of the language is best learned through practising speaking. The importance of speaking in the communicative classroom is well documented in the literature according to the communicative approaches (Underwood, 1984; Hedge, 2000; Felix, 2004). In the online session, audio chat was not used for conducting speaking and fluency practice that helped students build their spoken communication skills. Rather, the pedagogic aim of using this tool seemed to be teaching pronunciation and correction of student phonological mistakes, i.e. teaching language as a system.

The issue of facing technical problems when using audio chat was mentioned by faculty and students as being the main difficulty that hindered teaching speaking. Teaching listening was also absent from the online sessions. However, it was a natural part of the faculty's activity in the sessions to talk to the students such as when giving instructions, dealing with student questions and requests for clarifications, dealing with technical problems, answering student questions about the exam, using the materials website, and giving students' feedback and going orally over student answers:

> A student asks about the website and the faculty takes her through the website and shows her how to go to the main page and click on the right course, then use her username and password to access the materials. She suggests that the student add the link to her website. She clarifies things to another student who asked her a question about if they will take business English. (Observation 9)

On occasion faculty told students stories or anecdotes about their lives. On some occasions, faculty told students an anecdote about her daughter while speaking in English when she was teaching them grammar. On other occasions one teacher started the sessions by introducing herself, her interests, and her hobbies, and asked the students to do the same. When students listened to faculty during these activities, they were able to interact with them in writing and have some control of the discourse, just as in a real classroom. Students interacted with the faculty, for example, by interrupting, asking questions, giving a response, asking the faculty to repeat and clarify, and asking the faculty to slow down. In the following extract, one of the students asked for the teacher's permission to leave the session while another student told the teacher that he was going too fast:

> The class is still working on the vocabulary section and they move now to an exercise on noun modifiers…One student complains about the teacher's pace. Another wants to leave. The teacher tells the second student he can leave, and tells the first students to ask any questions and to stop him whenever he feels he is going fast, or ask him to repeat. He asks the student if he would like him to repeat anything. The teacher then continues the lesson. (Observation 7)

4.5 Faculty feedback

The role of the interaction that took place between teacher and students during this part of the lesson seemed to have pedagogic goals other than providing students with an opportunity for practising interactive listening. In addition, the opportunity that students had during the session to communicate and clarify messages and to negotiate meaning was limited to the use of text chat, which did not give students the

chance to take part in the dialogue as speakers. The following extract typifies how most of the communication between the teacher and students took place:

> The reading text has four paragraphs. It takes the teacher about ten minutes to read all of them. When he finishes he tells students that it is a long passage and it is full of new words. A student agrees that the passage is long and other students type a question mark. (Observation 8)

In the online sessions the faculty played a supportive role in terms of facilitating the materials for students and providing them with explanations, examples, illustrations, follow-up questions, and other actions. Faculty and students worked together (in a plenary form) on the drill-and-practice exercises and received automated feedback from the computer, which was often followed up with feedback from the faculty. The analysis of the nature of faculty feedback on tasks in the online sessions suggested that while a variety of feedback types were used by all faculty, the general approach of giving feedback involved a strong emphasis on the inductive guidance of students as well as on understanding of meaning.

The first type of feedback provided by the faculty involved the use of a method more or less similar to the wrong-try-again model used in computerised interaction to correct student mistakes. In this case, faculty would either give students the correct answer immediately after they made a mistake or would wait for students to correct their answers after faculty indicated that their answer was wrong. The following two extracts illustrate each one of these methods:

> He tells her that he is waiting for her answer. She types the answer in the text chat window. The teacher tells her that it is wrong and gives her the correct answer: "no …, not past continuous, simple past". (Observation 8)

> What does incredible mean? Can you give a synonym of incredible? A student says it means "marvellous." The teacher says it does not exactly mean marvellous. A student says it means "unbelievable." The teacher says "very good." The teacher asks him to do another sentence. The student uses the control and chooses the form from the drop down menu. The teacher says that

> the answer is wrong. The student tries again and he chooses the correct answer this time. The teacher thanks him (Observation 7)

Despite that this method of providing feedback was more or less similar to the wrong-try-again type of feedback used in computerised interaction, all faculty often provided students with feedback that went beyond this pattern reinforcement model provided by the computer, and that involved an inductive element where the correct/incorrect comment was combined with using cues, prompts, and guiding questions as well as other classic eliciting techniques to get students to discover the correct answer. What made this kind of feedback different from computer feedback provided through automated interaction was that it involved a focus on understanding of meaning rather than on the ability to "effectively imitate, memorize, and respond to a model dialogue" (Murphy, 2000: 5). This inductive-discovery approach in providing feedback was used by all faculty in the sessions observed and seemed to be the foundational basis of student-faculty interaction.

Eliciting answers was done by a combination of feedback techniques where students were not simply told that their answer was wrong, but were involved in a question and answer movement towards a specific conclusion. The following extracts show how a combination of telling students that the answer was wrong and then using the Socratic method of guiding and pushing them for the answer using elicitation techniques was used:

> The teacher then moves to another exercise where students have to tell what teenagers are doing in the pictures. A student says that the person in the picture is trying to catch the bus. The teacher says that this is not the point (this is not what the person is trying to do). She asks them to pay attention to the equipment the girl in the picture is using. The teacher tries to draw the students' attention to this equipment (a skating board) by putting two lines under it in the picture. She gives the students this clue and then asks again: "Look at that, what she is doing? " A student uses sliding instead of skating and another student uses skiing to describe what is going on in one of the pictures. She tells him that there is a difference between "skating" and

> "skiing". Then she draws two pictures for them using the whiteboard and the free handwriting tools to show students the difference between "roller skating", board "skating", and ice skating. (Observation 1)

Faculty commented on wrong answer then used a number of elicitation techniques where students were involved in a question and answer movement towards a specific pedagogic purpose. The teacher in the first extract told the student the answer was wrong, and then used visual stimuli where she drew the object on the whiteboard to elicit information to arrive at a meaning for the students. The teacher consistently commented on student's wrong answers, explaining why they were wrong and using further questioning to push the students for the verb she wanted. Eliciting and comments in the above extract was used in tasks that required a specific answer.

Elicitation was also used in tasks which did not require a specific answer. The next example of eliciting is a little different from the examples given above in the sense that it represents the thematic guidance in a discussion where the questions were open and therefore did not necessarily have correct answers. The example demonstrates how, through a process of elicitation, the teacher managed the discussion towards the theme of the lesson, which was about teenager behaviour:

> She introduces the topic for students: Killing time, and tells them that it is from unit 7. She asks students some questions about the topic: why do people kill time? She says that people kill time because they have a lot of free time. Students give their answers and comment (using text chat). A student says that he does not have free time. She comments on what he said and then asks: "why do teenagers have a lot of free time? " (Observation 1)

Eliciting and guiding students to a specific answer was sometimes done using clues. The following example illustrates how students were prompted to give the answer by giving them clues to help them find the answer:

> Now they work on word number 8. The teacher tells the students that they should find this word in paragraph 2, article B. She tries to help them by telling them that the word is an adjective and it is used to describe something. The students type "flashy," the teacher says "well done, all of you. It is flashy". (Observation 10)

The process of eliciting sometimes was combined with a technique that included suggestions of an alternative utterance, expression, or form where the student answers were rephrased in a more appropriate form to improve grammar, lexis, spelling, and/or content. The following extract from a vocabulary task not only demonstrates another example of eliciting, but how correction of lexis was done using this technique of reformulation where student answers were rephrased in a more appropriate form to improve lexis:

> The exercise is about compound words. The faculty explains the instructions and says that the students need to put two words together to make one word. She does the first one for them "energy saves". She asks them to do the second one asking "What else do we have with energy?" a student gives the answer "energy reducing" the faculty says "ok. What do you think of reduction? "What about reduction? (Observation 11)

While the teacher in the previous extract used reformulation to correct lexis, the teacher in the following extract during a reading comprehension task used this technique to correct content.

> Students are given a text with a number of paragraphs which start with poor sentences. They have to say what is wrong with each of these topic sentences and to write a good topic sentence ….He refers to the ideas in the text which students need to include in their topic sentences, and then asks students if they can put all these details in one sentence. He underlines the ideas on the screen in red and gives the students about three minutes to write a topic sentence which includes all these details. A student (J) writes her sentence in the text chat window. The faculty praises her for the answer and then reads her sentence. He tells her that she can include another piece of information in the sentence. He includes this information to make a good topic sentence then he types the sentence in the blank. (Observation 6)

Eliciting answers from students was also done by giving students examples of how to do a task and then asking them to give examples. In one of the lessons in Observation 3, the teacher reminded students of the grammatical structures they need to use when they complain about irritating habits. The faculty gave students examples of a lexical syntactic structure (using the present continuous) and asked the students to

invent similar examples. "The internet connection keeps having problems. My car keeps breaking down. My parents keep worrying about me. This student keeps asking silly questions." After that, the teacher tried to elicit similar examples from students by asking them to complain about irritating habits using the same grammatical-syntactic structure that she used. All faculties focused on understanding by using at least one technique for eliciting.

Focus on understanding in the online sessions was also noticed in faculty explanations of why the answer was wrong. Feedback that involved giving the answer immediately after students had made a mistake was often followed by faculty explanation of why the answer was wrong. In the following extract the teacher told the students that she read the sentence using the wrong intonation and explained how the intonation she used to read the sentence conveyed a feeling that was different from the intended feeling:

> The teacher waits for student's answers. A student gives an answer. She says maybe it is not a correct example because he needs to be complaining about a habit and it has to be a bad habit while the sentence the student gave in her example conveys a nice feeling. (Observation 3)

In the following example the teacher explained to the student that her answer was wrong because she put the conjunction before the verb, and reminded her of the related grammar rule:

> Now the class works on a similar exercise where students have to use "also" to add information. … (The faculty) reads the last sentence and asks the class where he is supposed to put "also" in this sentence. A student gives an answer. The faculty tells the student that the answer is wrong (He says "no Muna, not he also is, no, he is also"). He then explains to her why the answer is wrong reminding her that "also" comes after the verb "to be" and before the ordinary verb. (Observation 6)

In the following extract it was the computer that gave feedback on the input indicating that the answer was wrong, which was then followed by the teacher's explanation of why the answer was incorrect:

> The teacher reads the sentence and refers to the diagram to check if the sentence is true or false according to the given information. He then chooses the answer. He checks the answer (in the answer key) to see if it is correct. The computer indicates that it is not. The faculty corrects the answer and explains why the computer indicated that the answer was wrong and why he should have used past tense rather than present perfect in this sentence. He explains that using present perfect would mean that she is still working in the company so it is better to use past. (Observation 8)

In other cases, the faculty explained to students why a specific answer was the correct answer:

> This is another exercise on tenses. Students practice the use of tenses by deciding if the sentences are true or false according to the information in the diagram. (Student name) is the only student who is interacting with the faculty… When the student does the exercise the faculty explains sometimes why the sentences are true or false. He explains that the sentence "she has been working in software solution since 1994 is true according to the diagram because we have an action which started in the past and continues till the present. (Observation 8)

Focus on understanding in the online sessions was noticed as well in the techniques that faculty used to test student's understanding after students gave the initial answer. Faculty feedback tended to involve further questioning or required further explanation. For example, in Observation 8 when working on the grammar task, the teacher told the students that their answer was correct and praised them for the answer. He then went further to test student's comprehension of the task by asking them why they gave a certain response:

> The next exercise is about choosing the best form of the verb from the drop down menu. The students (two students) type the answer of the first sentence for the faculty in the text box window. The faculty repeats the answer, chooses it from the drop down menu, and gives the two students positive feedback stating their names. He then asks why the word "met" is the correct answer. He then explains to students that the present simple is the correct

> form of the verb because the sentence includes the adverb “last year”. (Observation 8)

Similarly, in one of the reading tasks in Observation 3, the teacher asked for explanation that required students to think deeply about the answer. The teacher asked the students to explain why they thought that a specific sentence conveyed the main idea of the reading texts:

> She then asks students which of the true sentences are the main idea and how they know. She asks them to explain why they think that a certain sentence is the main idea. She encourages students to participate by saying she needs help. She explains to them what main idea means to help them discover the answer. She says that in paragraph usually there is one idea that needs support, and we call this the main idea. (Observation 3).

Faculty emphasised that students should comprehend the tasks when they did them and that they should be able to explain why they chose a certain answer or gave a certain response. At the end of the session in Observation 2, the teacher asked students to do the rest of the reading comprehension questions on their own, stressing that they had to show understanding of the exercise when they did it and explain why they thought that a specific sentence conveyed the main idea of the reading texts

> (The faculty) asks students to read the rest of this article and keep on finding the main idea for each paragraph. She tells the students that they need to explain why they think a specific sentence is the main idea and find support for the main idea they choose (find support for their answer). (Observation 2).

Similarly, the faculty in Observation 3 helped students think critically before choosing a certain answer. Students were given sentences that had subtle differences from the reading text and were asked to decide which of the sentences contradicted or corresponded with the text, and to justify their decisions:

> The student tells students that what students need to do when working on these materials (reading materials) is to try to develop the skill of reading critically and thinking critically. She asks them if the paragraph is trying to say that Welsh people are second class citizens as mentioned in one of the sentences (that students need to choose from). Then she tells the students that the text does not try to say that. It says that Welsh people THINK they are second

> class citizens. She shows them how to exclude sentences that are not true according to the text or information that cannot be concluded from the text. Then she asks them to choose the main idea from the remaining sentences. After choosing the right sentence they move to the next paragraph. (Observation 3)

Finding the answer to these questions required students to integrate different pieces of information from the reading text, and to read the text critically by employing both reading and critical thinking skills rather than depending on memorisation. This approach required critical thinking and inductive development of knowledge that entails a high degree of mental processing and turns the practice exercises into learning exercises as well as providing cognitive depth, which positively affects learning. This approach required students to really engage with learning the language. In addition, faculty regularly checked student understanding of the task and of the points under review by asking them if they had any questions and if everything was clear for them (Observations 9,10). This would happen during or after the task or at the end of stage. In the following extract, during the reading stage, the teacher wanted to make sure that students understood the reading task that had been taught and asked them if they had any question before moving to the next task:

> The teacher makes other clarifications and asks students if everything is clear for them and if they have any questions. The students do not seem to have any more questions so the teacher starts reading passage 2. (Observation 9)

In some cases, students asked questions without being prompted by the faculty (Observations 8, 10, 11) when they expressed confusion or lack of understanding of the content, and asked the teacher to clarify, or repeat a certain point. When students had difficulties in understanding or explaining a certain issue, the faculty provided them with comprehensive feedback that included explanation and examples, and would also explain for students why the answer was right or wrong

before proceeding. In the following extract the students asked about the meaning of the vocabularies in the reading text:

> Now the teacher starts to summarise the ideas in each paragraph. He underlines or highlights some words and ideas during this process, asks questions and answers them. A student asks about the meaning of "symptoms" in the last paragraph. The teacher explains that when people have high temperature or a fever and reddened face these are symptoms that they have caught a cold. (Observation 8)

In the following extract, students asked about one of the grammatical structures during the grammar stage:

> The teacher explains the grammatical rules after he does the exercise. He tells students that "need to" and "should" explain necessity or obligation, while "Don't have to" express something which is preferred but not necessary or not obligatory. When the faculty explains these rules a student asks about the expression in the fifth sentence "have to have had". The teacher tells him that it is present perfect tense and the expression can be replaced by with "should" so the sentence would read: "Applicants should have had experience in refuge welfare." (Observation 8)

Finally, faculty comments in the grammar exercise included explanations of the grammar under review. What made this traditional deductive approach of teaching grammar interesting was that it involved a desire to make sure that students did the tasks based on understanding rather on memorisation, or on the use of the answer key. In one of the grammar focus tasks in observation the teacher asked students to refer to the grammar reference where they could find and review the rules that were related to the lesson that followed. He asked them to read these rules and to prepare for the controlled practice. He opened the grammar reference and showed them the rules he would like them to read illustrated with examples as shown in Figure 11.

Figure 10. Faculty asks student to use the grammar reference to prepare for next session

4.6 Classroom interaction

The lessons were primarily faculty centred. There was student-faculty interaction in the lessons, but student-student interaction was limited to using text chat, and it took place on only one occasion. Faculty-student interaction in the online sessions was characterized by a three-part model that followed the following sequence: initiation, response, feedback. This interaction model shared much in common with the IRF model of classroom interaction originally developed by Sinclair and Coulthard (1975). The initiation was often in the form of questions used by faculty on a specific part of the task. This initiation was followed by student's response that involved one student, or a number of students, providing answers to the part of the task that they were required to do. The response was provided non-verbally using text

chat with one of the students or a number of students typing their answers at the same time.

At times, giving answers involved the use of the control (or the desktop sharing features) allowed students to work on shared documents on the teacher's computer. The final part of the interaction sequence involved giving feedback or comment by the faculty who would acknowledge the student's responses, and would often follow up the answer after a student had responded to the initial question and ask students to explain why they chose certain responses. Faculty would then use text chat to type the correct answer in the chat box, or would type the answer in the blank, or drag and drop the answer to the right place, or match the items in the task depending on the nature of the task. This three-part sequence would start at the beginning of the task and be repeated until the last part of the task before the class moved to the next task or exercise within the same stage or to the next stage. The next extract from a lexis task is a typical example of this sequence:

> The teacher read the first definition: it's a building for growing plants in. the students say the answer is number 2. They type number 2 which means: greenhouse. The faculty says "OK. That is good" reads the word and matches it with its definition. Then she asks them to do the next one. She reads: it is the thing that heats your house. Then asks students: "what do we thing we call it? " The students type number 4. The teacher says: "Water heater. Good. (Observation 11)

And on another occasion:

> The teacher does the next one. She reads: "The bill for your heating". A student gives an answer. The teacher says "Excellent (student name). We call it heating bill." The teacher types the answer (Observation 11)

The interaction in all the online sessions observed was based on whole-class teaching where faculty led the activities in the lesson and provided information. Faculty-led interaction was used, for example, when giving instructions, when giving explanations, and when giving presentations. The different types of dialogues and

drills that followed a very structured approach, or where questions used in the lesson required specific knowledge, took place through faculty-student interaction. Every language and skills focus task was done in plenary form. The faculty was in control almost all the time and carefully managed the interaction. The faculty decided when there should be oral participation from students. Although the faculty did not decide all the time who spoke and when, student names were called out on many occasions, especially when the faculty question was followed by silence or non-response.

Faculty also had the power to transfer, or not to transfer, the control and the audio to the students in the session. Having the control enabled students to work on the shared documents and do activities such as turning pages of the materials, filling gaps in drilled practice, asking questions, and choosing the answer from multiple choice exercises. However, it was the faculty who enabled the students to do that and who decided what tools students would use to give an answer as well as the form in which these answers should be given.

Faculty decided whether students should type the whole word, part of the word, or just use numbers in the text chat window when they provided the answer. This last method of giving the answer was common in all the sessions observed. Students seemed to follow faculty instructions. On one occasion, however, some students did not conform to the faculty choice of the control tools and used text chat instead. On the other hand, there were no tasks or stages in the lessons observed where doing tasks required student-student interaction in speaking or writing in the form of discussion, storytelling, role play, or any other kind of communicative tasks with the purpose of developing student fluency and use of the language.

What characterised the interaction in the online lessons was a lack of learner centred activities that empowered students and helped them develop their

communicative competence within a learner centred approach. In all of 11 sessions observed, there was a complete lack of activities that required pair and small group work such as role play, speaking games, mock interviews, or group discussion

4.7 Conclusion

The objective of this chapter was to recite the results of the study from the standpoint of the observations that took place. Findings from observation of the online sessions as well as observation of the use of materials and document analysis were revealed. The purpose of the observation of the use of the online environment was to form an impression of the *reality* of the *learning and teaching experiences of faculty and students* in terms of what *actually* happened in this environment. Findings about the nature of the online environment in terms of how the different elements of this environment such as technology, tools, resources, educational materials, and pedagogical orientation were incorporated to support language learning and to meet students' needs were stated. Findings showed that students' learning was supported through the use of both intelligent tutoring systems and content free applications. This support was met through the use of different types of controlled practice activities that focused on accuracy and on teaching structural knowledge of the language. Students' needs for student-faculty interaction and faculty feedback were also meet and the online sessions seemed successful in doing this. Specifically, the observation of the online sessions showed that the overwhelming majority teaching time was spent on providing students with personalised feedback; this type of feedback is known to make a valuable contribution to students' foreign language. However, it was also shown that the online environment did not support students' needs for using the language in speaking and for developing communicative competence. Interaction among students themselves occurred only on very few

occasions (specifically, on two occasions, or about 3% of the total time given to lesson observation)

Screenshots of all computer interactions in this chapter are available by contacting the author. The following chapter contains findings from the interviews with faculty and students.

Chapter 5.0 Interviews

The present study relied in part on interview data. "Data extracted from interviews are subject to the limitations imposed on all instruments which rely on language for conveying and extracting meaning, namely, the reliability and validity of subjective data" (Coffin, 1997: 7). The interview process was guided by the research questions and sub-questions cited in Chapter 1.0, and supplemented with 10 open-ended questions. Although the interviews were semi-structured, two unstructured questions were used to allow participants to talk about other topics as they chose. Findings are cited in this chapter. Discussion of findings and conclusions drawn from them will be found in Chapter 6.0.

The online environment includes three formats of delivery: audio-graphic conferencing where regular real time sessions were held between teachers and students; web-based environment where automated materials were made available online for self access and self study; and asynchronous tools which include emails and a discussion forum. It is important to mention here that although the online environment which this study examines incorporates three types of technologies, i.e., audio-graphic conferencing, emails, and self access materials, the teaching and learning in this environment is mainly delivered through audio-graphic conferencing. Emails are mainly used for general communication between students and teachers, but used for collaborative work only in some cases and only by some teachers. In addition, although the automated self access (or web-based) materials are made available online for self study, these materials are delivered through audio-graphic conferencing. This mode of delivery is used by many students as an alternative to individual study. Therefore, the major part of this study focuses on the use of the audio-graphic environment.

5.1 Summary of results from qualitative questionnaires

Data from the questionnaires revealed issues that participants saw as important. The questionnaire was related to research questions pertaining to student perceptions of the opportunities (Table 4) and constraints (Table 5) of the online environment. The opportunities and constraints which were mentioned in the questionnaires together with the number of students who mentioned the related opportunity or constraints are shown in the table below:

Table 4. Results of the qualitative survey questionnaire concerning opportunities.

opportunities of the online environment	number of students	Sample quotes
Interaction with teacher and students	40	I like to interact with the teacher and with other students I like to learn from both teachers and students…this gives me a wider experience
Grammar	34	I like grammar
Practice		I like to practice and do exercises
Explanation of materials by teacher	29	I like the fact that the teacher spends a lot of time explaining the materials to us (in the live sessions). I attend the live sessions because I can ask the teacher any question if I don't understand something
Learning new vocabularies	7	I like to learn new vocabularies
Learning Pronunciation	9	I learn pronunciation by listening to the teacher I attend the session in order to learn pronunciation
Lack of social cues	3	I feel comfortable …away from the eyes of teachers and students
Access the materials Anytime/anywhere	2	I can access the course at any time I want and from any place
Automated answers	2	I can work on my own on the materials and get answers with explanations
Flexibility allows study and work	2	The online course allows me to study and work at the same time

Peer correction of mistakes	16	It doesn't matter who corrects my mistakes
Use of English only	9	I like the teacher to use English only…this improves our speaking …we learn languages to speak these languages.
Use of Arabic	19	The use of Arabic sometimes helps us understand better than English I prefer Arabic with low levels and English with more advanced students

Table 5. Results of the qualitative survey questionnaire concerning constraints.

constraints of the online environment	number of students	Sample quotes
Little speaking	27	We should spend more time on speaking We should work on our speaking two hours a week outside scheduled sessions to improve our speaking
Focus mainly on grammar	3	We should focus more on speaking and less on grammar
Little listening to recordings of native speakers	2	We should listen to more recordings to understand English as spoken by native speakers
Technical difficulties	2	Something should be done about using voice chat. The voice is low and interrupted .this does not help in learning pronunciation and speaking
Little interaction between teacher and students	3	There should be more interaction between teacher and students
Interaction with peers	8	I don't like to interact with other students I like to interact only with the teacher because he knows better than anyone else in the class.
Little or no use of chatroom/discussion forum	39	We don't chartrooms and discussion forums...We are not aware of them ...we don't have time These (facilities) are not activated and not used in the university
Little or no interaction outside sessions	9	I don't interact with students…outside sessions...because we are in a virtual space. it is difficult, we don't have time, we don't have group work, I like to interact with other students but this is not available

Teacher but not peer correction of mistakes	21	I like the teacher to correct my mistakes but not other students

The issues cited in Table 4 and Table 5 were discussed in length in semi-structured interviews with faculty and students. The findings from the questionnaires supported the findings from the interviews. Most of the students required opportunities for speaking. One student said that this was not essential to him as his job required writing rather than speaking skills. All students appreciated interaction with teacher except one student (not the same student though) who preferred to work independently on his own. This student had the skills that enabled him to do all the requirements of self study for example he can search the grammar reference to check why his answer was wrong, he was also able to go to the library and search for information and so on. However, the rest of the students appreciated interaction with the teacher in the online session either because they lacked the skills or time for individual study. They preferred to work with the teacher. This shows the importance of audio conferencing and the support that students get during live meetings with the teacher. However, most students demanded more opportunities for speaking. This shows that this tool might not be adequate in the present situation (poor infrastructure) for fulfilling this need. It is interesting to know that all students appreciated a focus on form and correction of mistakes and thought that it was for them to learn structural knowledge of the language and appreciated automated feedback. However, in order to reach conclusions which are based on probing the issues that resulted from the questionnaires were probed in semi structured interviews. A recitation of mentioned opportunities and constraints is presented in the following sections. Discussion of the results will be found in Chapter 6.0.

5.2. Opportunities of audio-graphic conferencing

Students and teachers cited the following advantages of teaching and learning with audio-graphic conferencing in language teaching and learning. Results are presented together in Table 6 to provide comparison of perceptions, attitudes, and lived experiences.

Table 6. Comparison of faculty and student perceptions of the audio-graphic environment.

Teachers' perceptions	Students' perceptions
• Provides a motivating environment • Improved quality of feedback compared with the automated feedback • Assesses students' needs • Gives remedial exercises • Engages students in lesson • Offers anywhere flexibility/place flexibility • Easy access to wealth of information • Offers anonymity /lack of social cues • Teaching fluency	• Provides a motivating and exciting environment • Improved quality of feedback compared with the automated feedback • Saves time and effort • Interaction with the teacher and with peers • Teaching materials in manageable parts • Explains why answers are wrong • Developing listening and pronunciation skills • Assesses students' needs • Gives remedial exercises • Offers anywhere flexibility/place flexibility • Resolves misunderstanding/ through chat box • Exchanging text with peers

5.2.1 Flexibility. When teaching and learning through audio-graphic conferencing, students can access the virtual class from any place that offers internet access and the required technical specifications. In the interviews, this flexibility was cited by both teachers three teachers and students 5 students as one of the most helpful aspects of learning with audio-graphic conferencing. Student 6, who generally expressed several negative views about the online experience, remained in

favour of the use of audio-graphic conferencing as it offered him the opportunity to study and work at the same time. He admitted that online learning offered him an advantage not provided in face-to face-teaching and learning: "We have the advantage that we can attend the lectures at the time that suits us, this is a very good thing" (Student 6). Another student remarked: "I feel that in the Virtual University one can choose the time that suits them. For me I am always free in the afternoons so I attend the afternoon lectures" (Student 2). Similarly, Teacher 2 noted that online learning presents an advantage to students because:

> Students have options: they can attend the lectures that suit their time, they can choose the lecturer, they can attend from home, they can attend from any place that provides a good connection, so this flexibility is one of the advantages of learning online, they also can work and study at the same time. Another thing is that students who have special needs...this (flexibility) is very beneficial for them. (Teacher 2)

In addition, live sessions were recorded and made available for students. This provided students flexibility of access when live participation was not possible. Teacher 7 noted that many students downloaded teaching sessions to their computers and played them at their own time. Students 8, 7, 6, and 3 appreciated this flexibility.

> We have the recorded session available on the website, we can download them and listen to them, this is a big advantage for us especially during exam period, it helps, is very helpful for students who have a job. (Student 6)

The comments above show that recording the synchronous sessions was one of the factors that improved the flexibility. Audio-graphic conferencing offers not only flexibility as to time, but when and where students attend. Students and teachers mentioned that they relied mainly on the Telecentres provided by the university because they did not have a fast internet connection, if any, at home.

5.2.2 Advantages of the live virtual classroom. In the interviews, Teachers 1, 2, 3, 4, 5, and 6 and students 4, 5, 7, 6, 2, and 8 referred to the benefits of learning

in a classroom setting as opposed to learning alone at the computer. Some students remarked that learning in class provided them with access to fellow students through text chat: "We discuss the answers (to the exercises), or we have a general discussion, and we are allowed to discuss anything provided that it is related to the session" (Student 4). Student 4 commented that text chat helped the exchange of ideas, the ability ask classmates questions, and solve misunderstandings:

> As for interaction with other students, let's say we have to do a grammar exercise, and one of the students does this exercise another student may have a different opinion about the answer and this initiates a discussion between them. (Student 4)

Student 5 said:

> Let's say that we come across a word that I am not able to understand and which the teacher did not explain, I may ask my classmate about the meaning of this word if he has better language ability or may ask him about a certain grammar rule or about anything and get help from him. It is simply kind of clarification of things which we learn in the session. (Student 5)

Learning in class also provided an active classroom atmosphere that promoted motivation and active engagement in lessons. In the following extract, one of the students explained that working in class offered an interactive working environment where students could access the educational content in real time and manipulate it within a shared document while other students were watching:

> In the online (live) sessions the teacher asks us questions and we answer… when he teaches us the materials he may give the control to any student ; let's say we have gap filling exercises, the student can use the mouse to fill the gaps with the right answer while other students are watching him. It is very interactive, much more interactive than self-study. It is more enjoyable. (Student 5)

Student interest and motivation derived was because they were learning with their classmates rather than alone, and because they had an audience for their work. Students knew they were expected to interact and collaborate with the teacher in the sessions, and that they could be called upon at any time, which kept them alert and

prepared. Faculty referred to the benefits of working in a class as opposed to working individually. When students worked in class they felt motivated to learn from each other. Teacher 6 said students feel motivated as well by a sense of competition: "As you know when students listen to each other, they think "wow, her accent is great so I have to practice more and improve my accent." Learning in class offers an environment where personalised feedback and assistance was provided by the teacher and where students could learn from each other's mistakes:

> The tutor receives comment from all students, gives them feedback on deadly mistake so that other students can avoid these mistakes, comment on good opinions, comment when a good language is used and encourage the rest of the students to use a similar style, encourage students to do follow up of their comments so the rest of the students would benefit from that. (Student 5)

In the online sessions, students received feedback on their accuracy followed by grammar explanations, especially when their answers were incorrect. Students seemed to appreciate this type of feedback as opposed to the online feedback they received when they interacted with the automated materials. Student 7 compared teacher feedback with automated, right/wrong type of feedback:

> Even if I read the grammatical rules in the materials, I do not know how I am supposed to apply them (when I study on my own) …. The grammatical rules are available in the materials, but even if I read them I cannot tell how the teacher applied them. But when I attend the sessions I can see how the teacher applies these rules and how she does the exercises, this can help me a lot and can save me a lot of things.

She added:

> Teachers explain the exercises before they do them…as a student, I am not looking for right/wrong (feedback), I am looking for something that helps me when I have to do the same exercise, or, let's say, a similar exercise in the exam; I need to know how to apply the rule so that I can work out the answer on my own.

Faculty provided students with an improved quality of feedback based on understanding rather than on reinforcement and trying to change student behaviour.

This view was shared by Student 5 who said interaction with the teacher obliged him to understand the exercises rather than memorize answers: "This process (interaction with the teacher) obliges us to understand the (grammatical) rules before we do the exercises; this dynamic process, this interaction with the teacher is very necessary." Student 6 mentioned that the teacher helped students correct any misconceptions they had about the target language. The student explained how the teacher provided assistance with rule and hypothesis formation:

> We need a teacher to help us learn. For example, when I do an exercise and choose an answer, I don't choose this answer randomly; I choose this answer because I have formed a rule that I used to distinguish the right answer from the wrong answer. When I choose what I think is the right answer and the computer indicates that what I have chosen is wrong, I am not able to tell why it is wrong and according to what rule the original answer was corrected. Here we start to discover new ideas (formulate a new rule) which might not be correct either, and because of that we have it all wrong.

On the other hand, when students studied on their own they may not have been aware of a mistake they made and think they were doing well while they had many things wrong:

> "It is very difficult to study English on your own, when learning English you make mistakes that may stay with you all the time, like wrong ideas or wrong pronunciation, and in the long run you build wrong foundation. This is why it is better to have a teacher who directs us and corrects our mistakes when we speak than try to study on our own and evaluate our learning, we need supervision". (Student 6)

These perceptions reflect student need for a teacher who would provide them with a different type of feedback from that provided by a computer program. The comments above indicate that computer feedback was inadequate partly because it was of the right/wrong type of feedback, and because it did not provide any explanation as to why their input was incorrect, but used repetition and reinforcement instead. This suggested an approach to learning based on memorization, which apparently students did appreciate, especially when doing similar exercises during an

exam. Students believed faculty input promoted greater retention of information. Students 2, 7, and 5 said they did not need to do individualized study in front of a computer except for revision before an exam, and that working on the materials with the teacher through audio-graphic conferencing provided them with sufficient information:

> As for me I don't work on the self study materials on my own, I attend the sessions from home instead… attending the sessions helps me more to retain information and I can take my time when I learn this information, so I don't have to study again on my own. (Student 2)

Similarly, Student 5 noted:

> When I attend the online class on a regular basis and participate in the session and get a grasp of the subject I can do the exam without having to study the materials or I may do a quick review just to refresh my memory of the information….I will talk especially about teaching grammar. The teacher explains the grammar rule for us and does the related exercises; we don't have much difficulty understanding these things. This information can be helpful in the exam especially that we are offered choice from optional questions.

Because students considered online conferencing as a more convenient mode of learning when compared with self study in a web-based interactive online environment, students used class meeting and teacher feedback and support as an alternative to self study:

> Students study the notes the teacher send us in word documents and they listen to the recorded sessions , that is all, all the students who I know do that, they listen to the recorded sessions, they do not study the self-access materials on their own. (Student 9)

The role of the faculty was seen by both teachers and students as essential for providing students with improved quality of feedback, but also with support and assistance in their online learning. Faculty provided students with different types of support such as "chunking" the materials into manageable parts, assessing student's language skills, using remedial exercises, making students familiar with how to use the materials and how to make the most of the interactive materials when they do self-

study. Student 7 said the teacher helped students manage their learning by teaching them the materials in small manageable parts in regular synchronous sessions. The student said teachers diagnosed and suggested remedial work:

> She (the teacher) asks us to explain to her (what we understood) so that she can assess our language skills, like she identifies students who have weakness in pronunciation, students who have weakness in grammar, students who have weakness in writing. She identifies the area of weakness for each student so that she can concentrate on that area…She may send each student a different type of exercise depending on the weakness each student has. She may send us this exercise as an email attachment and ask each student to work on his exercises. She does not just rely on the exercises in the materials that we have available on the web. (Student 7)

Teacher guidance on the use of the materials was similarly valued by teachers:

> Some students need guidance, you need to show them that they need to think about the answer rather than go straight to the answer key. When they have true/false questions they need to know why it is true or false and show you an example from the text rather than simply go to the answer key and get the answers without understanding why it is the answer. (Teacher 3)

Teacher 6 noted that the teacher teaches students "the right way to do things, how to think in a certain way. She added that:

> [The teacher] even teaches them (students) how to use the materials. Some students do not even know how to use the materials so the teacher can show them how to use them and how to get the most out of them, of the grammar, of the reading, of the writing.

Teacher 5 described how she promoted this type of learning by modifying the exercises and asking "unexpected questions."

> I can for example change the matching exercises into definition exercises, like I hide the term and give the student the definition and he has to give me the term. By this I make sure that they studied the unit. So (in the online session) I ask about things that they did not prepare. When they work on their own they prepare the text but I can ask them about a word if it is a noun or a verb. If it is a noun I ask them about the adjective. So I always ask unexpected questions. (…) So instead of interacting only with the textbook, students learn and interact in the classroom environment.

Teacher 3 said she provided guidance not only on how to use and study the materials but also on how to use the wealth of information available on the web:

> Students have access to a lot of information so it can be difficult for them to know what is useful for them and what is not, so the teacher chooses the right information for them, his role changed into a guide who guides students rather than gives them information or lectures to them (which is) the traditional role the teacher used to play.

Teacher 4 remarked that the teacher's job was to put students "on the right track" when they used the web: "The web is full of correct and incorrect information and you need to know what to choose, you see, so our job is to put them on the right track." Teacher 2 referred to the importance of the teacher's role in terms of building up students' knowledge: "The teacher tries to rebuild students' information and help them with things that they missed in previous levels."

These comments suggest that web-based learning cannot be used as a substitute for the teacher or as a stand-alone approach, and that students need to be supported at the different stages of their studies

5.2.3. Lack of social cues. While participants experienced a number of difficulties with the lack of body language and social context cues in the audio graphic environment, this was seen at times as an advantage as it promoted equality and also allowed students to remain invisible, and therefore, to feel more relaxed when they attended the synchronous sessions. It is interesting to note that the same participants (Student 6 and Teacher 4) may have viewed lack of body language both as an advantage and as a disadvantage. Lack of body language was experienced by some participants both as liberating and restricting. The positive impact of lack of body language was mainly mentioned by students, but Teacher 4 also commented on this issue by noting that:

> Generally speaking, shy students do not participate in face-to-face classes as much as they do in online classes, because in the online class no one knows them, no one can make fun of them if they do not know the (correct) answer, so they feel more encouraged to participate.

Similarly, students (*S2, S6, and S10*) referred to advantages in the lack of social cues in the audio-graphic conferencing sessions. One student explained that the invisibility offered by the audio-graphic conferencing encouraged participation:

> This (invisibility) is an advantage in online learning: we don't have any problem if we make mistakes, while in face-to-face learning when the student makes lots of mistakes in front of the teacher he feels embarrassed in front of the class". (Student 2)

By way of illustration this student said that being interviewed online made him less "self-conscious" and less anxious about "saying the right thing":

> like now we are talking to each other me and you, you can't see me and I can't see you so we may not feel self-conscious like if we were meeting face-to-face; we may not feel worried about such things like saying the right thing S2

It can be concluded that the unavailability of a webcam during the sessions sometimes presented an advantage:

> The use of webcam may help, but generally speaking people wouldn't feel comfortable with the idea, we have the advantage of being able to attend from home, and not having to go to the Telecentre. (Student 6)

The student pointed out that the lack of visual cues freed teachers from the burden of presenting an acceptable on-screen appearance, while it created a relaxed and comfortable atmosphere for students and gave students the freedom to do things during the sessions which conventionally they would not do in the presence of a teacher (like smoking and drinking coffee):

> Sometimes the teacher would give us the lesson from home, so why would he want to dress up and sit in front of the webcam when he is in his own home. I may attend the session from my room while doing anything I like, using a webcam is so inconvenient… using webcam doesn't contribute anything, what would I gain if I see his (the teacher's) face and if he sees my face? (Student 6)

The last comment indicates that adding a webcam feature may not enhance online interaction but only make more demands on the participant. In addition, according to this student, adding a video feature would not enhance students' engagement in the lesson because webcams cannot convey the actual physical features of communicators,

and therefore cannot give the teacher the vital (social context) cues to the level of students' understanding, or to any difficulties they may have. The student also believed that screen management could be difficult especially with a large group of students:

> When we have 20 students in the class the teacher would need to view the 20 webcams to see students' facial expressions. This is not practical. It is not like when the teacher is standing in front of the students and can see all of them in one glance. He can see those who are trying to hide in a corner because they have not been able to understand, but this cannot be done through moving between students' webcams. (Student 6)

Another student who thought she may face discrimination due to her distinctive characteristics finds this visual anonymity to be a great advantage in synchronous meetings. For her, the lack of visually individuating cues eliminates visual prejudices and promotes equality between participants as there was less possibility to judge students on the basis of their background or appearance (S10).

5.2.4. Easy access to online resources and information. The perceptions reported under this category were related to the easy access to online resources when teaching through audio-graphic conferencing. Opportunities related to use of resources on the web were mainly cited by teachers. Many teachers (4 teachers: T1, T4, T6, T8) cited easy access to information and resources on the web as one of the main advantages when teaching with audio-graphic conferencing, and one of the main things that they liked about teaching the online English course. Many teachers viewed the online environment as particularly valuable for the teaching of English as there is a wide variety of resources in this language on the Web which were exploited by teachers to facilitate and enrich their online teaching.

> The good thing is that we have a broad range of resources because we teach English so , as you know, there is a very large number of websites so we can do whatever we want in the session, we can do anything related to the lesson. This is an advantage for the students and they find it very useful. (Teacher 1)

Another teacher remarked: "...you can get games online, you can get different exercises, explanations, whatever" (Teacher 4).

Teachers use these resources in many ways. Teachers described how they exploited this "unlimited" access to information and resources for English on the Web to ease the communication with students and enhance the learning of English. For example, the web provided a variety of online exercises such as reading texts, grammar, listening, and grammar practice exercises and so on, which were used by some teachers to provide students with additional practice in specific areas of language learning such as teaching grammar as Teacher 4 explains below:

> One of the things I like is the use of the Web …students can use the Web when they study any part of the language. As a teacher, when I want to teach English, let's say grammar, teaching tenses; I want for example, to give students more practice, I can just go to Google search and get help. (Teacher 4)

Two teachers used further online resources, accessed through the search engines Google and *Google Image*, to help him/her convey meaning to students and, at times, to look up words in online dictionaries. Exercises and information related to the teaching of English were referred to as easily accessible and as appealing to a variety of learning styles. English resources on the Web were also used to give students explanations and clarifications and to convey meaning:

> Sometimes when I have a problem I explain a point and one of the students jumps and says "I don't understand this", I immediately go to Google and show them what I am talking about…this is one main advantage for me when teaching online. (Teacher 4)

Similarly the teacher in the following extract used online resources to convey meaning to students:

> During the session, I use two online tools: an online dictionary like Longman or Oxford, I teach them how to find a word in an English- English dictionary… if the word is very difficult and they are not able to understand its meaning and how it can be used etc…, I simply go to Google Image and show them the picture, so they like this a lot because they would know immediately what I am talking about. (Teacher 6)

Similarly the teacher in the following extract used online resources to convey meaning to students. This suggests that teachers viewed the online environment as particularly valuable for the teaching of English and also indicates a willingness to take advantage of the opportunities such learning environments have to offer.

5.3. Opportunities of web-based learning. As mentioned before, the English course offered students automated online materials which students could access and work on individually in self study mode. The interactive nature of the materials allows students to study independently of a teacher at any time they wish and get corrective feedback on their responses from the computer. Not all students used these materials independently of the teacher. Those who did, however, were able to talk about their experiences of learning in this part of the online environment. The findings in this section indicate that web-based learning offers certain advantages and potential for foreign language learning that cannot be attained otherwise. Perceptions of the advantages of the online environment for teaching and learning (Table 7) of English include advantages related to:

Table 7. Comparison between faculty and student perceptions of web-based language learning opportunities of web-based learning.

Teachers' perceptions	Students' perceptions
• practice of form • mastering and practising language structure • additional practice • offering digitized content for audio-graphic environment • facilitates interaction with teacher	• independent learning/absence of teacher • ability to repeat exercises • self paced learning • ability to take tests • instant feedback • enjoyable learning

5.3.1. Independent learning/absence of teacher. The possibility for independent learning was cited by students 1, 2, and 6 as one of the main advantages of this type of programme as here in regard to the automated feedback in online exercises:

> What I liked about the course is that we can access the online materials any time and study them without the teacher…we also have instant correction of exercises; the program checks students' mistakes and corrects them. (Student 2)

He added: "the interactive materials indicate when you make a mistake and if there is a thing that you don't understand it may provide you with explanations…they provide you with immediate corrective feedback, it checks and corrects students" errors (Student 2). This instant feedback according to one student was described by this student as more 'enjoyable'

> When we do the exercise we can get the answers. Before that (automation) we had to get help from someone, but this (automation) made things easier; (it) facilitated our study to some extent (and) made it more enjoyable and more pleasant. (Student 1)

The materials were not only interactive, but also comprehensive and presented in a clear way which was another factor that allowed students to study independently of a teacher: "One can access the online materials (on his own), they are clear, comprehensive, and they include all the difficult words and things like that, they include everything." (Student 2).

Students could access the materials and study at different levels of language proficiency, and also take tests to decide their level of proficiency at any time (i.e. independently of the teacher). Students could work on different parts and levels of the materials at their own pace: "I liked the fact that we can access the course any time and go to any level we want, we can review level one, two, and three and so

on…" (Student 2). "The materials are available online, you can access them at any time and you can take a test …" (Student 6).

One of the students (S1) mentioned that students could work individually (not with other students and independently of a teacher) on the materials allowed for self-paced or self-accelerated learning, where each student could progress at his own pace without having to work at the pace of the slowest student in the class. In addition, he felt that the lectures could be boring sometimes which could de-motivate him:

> Personally I cannot sit down and listen to (the teacher) for two hours….the teacher makes things easier but the good thing in the university was that we could study independently of the teacher, … I prefer to depend on myself even if it needs more effort, than sit for two hours listening to (a lecture) which even may be boring and create negative attitude and make me hate the subject.

One of the advantages stated by students of web-based learning, then, was absence of teacher and that the interactivity feature of web-based learning allows students to work individually on the materials and get feedback. This was seen as an advantage to what could be done by the teacher in the classroom

5.3.2. Mastering and practising language structure. Another big advantage which was cited by students of web-based learning (or the interactive materials) was that they provided students with the opportunity to focus on the form and develop their accuracy. Some students (S1, S2, and S3) in this study appreciated the fact that web-based learning allows them to practice language structure and develop their knowledge about the form. One of the students described this knowledge as 'vital' and that it gave students a 'solid foundation' in the target language:

> What I like about the online materials is that it teaches language structure so that students would be able to some extent to use the language in a grammatical way, rather than just put irrelevant things together. It allows students to practice…The materials teach you how to structure your language in a grammatical way…. The purpose of the materials is to teach students how to formulate his speech in a grammatical way, rather than use words which are not relevant to each other; they are able to formulate their speech. They practice that. (Student 1)

This indicates that the students find practising language structure very important. Similarly, the student in the following extract cited a connection between focus on form and improved linguistic accuracy in writing:

> I think that when the students study the materials and concentrate on the grammar and the vocabularies and on sentences and how to combine sentences, eventually he will be able to write well because they (the materials) include all the grammar rules and include everything. S2

Gaining knowledge about language structures and learning vocabularies gave students a "strong foundation", which was seen as an essential first step before students could make any effort to work on their English independently and make individual effort to improve their language:

> We learn beneficial vital knowledge of the language then we work by ourselves to learn other things about the language… learning the vital knowledge about the language enables us to work on our English independently by reading books, surfing the internet, and things like that. (Student 3)

> The course is beneficial to many students especially those who would like to start working on their English before they take lessons outside university or travel abroad…the English course gives them a very strong foundation. (Student 3)

The above comments show that students appreciated the focus on the structural aspect of the language, and that drill-and-practice helped them develop accuracy through repetition and reinforcement.

5.3.3. Teacher support. The discussion forum was not activated when this study took place. Findings show the importance of providing students with support at administrative, emotional, and pedagogic levels. These three types of support are important in traditional classrooms, but they are especially significant and crucial when face-to-face communication is completely absent. Two teachers said they used this medium in previous courses to provide students with support. In the following extracts, faculty explain how they used this medium to provide students with different

types of support: administrative, emotional, and pedagogical. Teacher 5 explained how the discussion forum could facilitate her communication with students for administrative purposes:

> The good thing about the discussion forum is that if the tutor wants to notify the students about something he doesn't have to send the announcement to each and every student. I post the announcement there (in the forum) and if they have questions I answer their questions there. Actually I always receive the same question from students and I have 25 students in the class and each one of them has enquiries or doubts about the same thing and to answer each and every individual on their own is time consuming so when I use the discussion forum I am saving a lot of (my) time and I am saving their time.

Teacher 4 explained how she used the discussion forum to provide students with social emotional support, referring to the importance she gave to the discussion forum as a tool to "break the ice:"

> The discussion forum is another very good thing …positive…usually I post ideas there… I post a topic there for students to discuss… they come up with a lot of interesting things …the first thing I would do when the course starts I would post a topic for students to discuss, they come up with a lot of interesting things, … I would post a topic "tell me about yourself". This would break the ice … I mean you have other means to make it similar to face-to-face.

Teacher 4 explained how she tried to build a feeling of intimacy with the students by interaction with them in the forum to ensure they did not feel alone: "I post a topic asking students to introduce themselves, One of them once posted "I love to swim." I replied "really? So do I." by this, the student feels the intimacy and that he is not alone. I chat to them, I joke with them."

5.3.4 Student-student interaction. Emails were typically used in the course for general communication between students and teachers. They were also used as a means to encourage and support collaboration between students and encourage written communication between students in the target language. Such emails were used by some teachers, but only with advanced level students where students

presumably could use the target language in written communication. Students were required to work in twos or in small groups on a collaborative project that was an assessed writing piece of work, and to use emails for their interaction when researching, questioning, and sharing ideas during this collaborative activity as well as when they reviewed their report and sent feedback to the teacher. Teacher 5 explained how she used the collaborative project to present situations to be solved through the use of the target language such as "how should one prepare for opening a restaurant:"

> The student has to plan in his own way, he has to think about the things he needs to buy, the people he would employ. Now I turn this activity into a group work so that students can negotiate in English and practice the language. This is a good practice for them…We ask them to send us copies of their emails when they work on this activity. They send copies of their discussion to the tutor.

Teacher 4 said when she used discussion forums in previous courses she asked the students to post their contributions on the forum instead of using emails:

> I give them a project on the discussion forum, for example, I sometimes ask them to do a trip to a specific place and I assign each one of them a task I tell them: "you will go to a specific place and you have to arrange this trip together and complete the project." So they post all their ideas for me (on the forum) instead of using emails.

The comments above show that emails were sometimes used for written communication skills and critical thinking.

5.4. Constraints of the online environment

Two of the research questions cited in Chapter One were focused on student and faculty perceptions of the constraints of the online environment. The questions concerned faculty and student perceptions of the constraints of the online environment. The following discussion is divided into three parts. Part one deals with faculty and student perceptions of the constraints of the audio-graphic conferencing environment.

Part two deals with perceptions related to the constraints of the web-based materials. Part three deals with perceptions about the use of asynchronous tools, and particularly emails and the discussion from.

5.4.1. Constraints of audio-graphic conferencing. Faculty and students in the study cited many challenges arising from the use of the audio-graphic environment in language teaching and learning as summarized in Table8.

Table 8. Comparison between faculty and student perceptions of the audio-graphic environment.

Teachers' perceptions	Students' perceptions
• Lack of speaking practice • Slowness • Reduced form of interaction with peers (text chat only) • Limitations on use of voice chat • Reduced quality of voice • Technical overload • No body language • Difficulties in turn-taking • Reduced spontaneity • Requires more effort to engage students in lesson	• Absence of personal interaction with teacher and peers • Lack of speaking practice • Slowness • Reduced form of interaction with peers (text chat only) • Requires more effort and therefore time to engage students in lesson (time consuming) • Reduced engagement in lesson • Difficulties in turn-taking • Technical overload • Reduced quality of voice • Limited opportunity for personal interaction with peers and teacher

Teachers 4 and 7 mentioned that the real-time nature of audio conferencing meant they had to access sessions at a specific time, which decreased the "anytime" flexibility of the programme. They tried to schedule sessions at a time that suited most students, especially those who had to go to work in the morning. Teacher 4 noted: "One of the requirements in the course is that teachers must schedule one of the three weekly lectures in the afternoon so that students who work can attend."

5.4.2 Technical problems. Teachers 1, 2, 3.4, 5, 6, and 7, and many students 1, 5, 6, 7, 8, and 9 commented on technical problems during the synchronous meetings through audio-graphic conferencing. Participants thought technical problems constituted the major disadvantage of teaching and learning through audio-graphic conferencing. Difficulties included low sound quality, voice distortion or total loss of voice that caused difficulties of being heard or hearing others, students being logged out from the session by the system, loss of internet connection especially when doing certain activities or when a large number of students attended the session, weak internet connections, and losing packets of data. Technical problems were mainly due to the persistent problems with the internet connection (ISPs and bandwidth) that sometimes hindered successful communication with students especially when voice chat is used. This caused frustration as teacher 3 remarked:

> I hope that the technical problems that we are facing get less. These problems can hinder successful communication with students and cause frustration on the part of both teachers and students.

Teacher 4 noted "When students cannot hear me I use keyboard chat. It can be frustrating but you have to do it. As for the disadvantages, the technical side, the connection is the main factor that causes de-motivation." Teachers and students experienced difficulties with hearing or being heard by each other when they participated in the online sessions: "It (voice chat) does not work sometimes, we get cut off, and the voice can be slow because of the bad connection" (Teacher 2).

Two teachers made further comments:

> We cannot hear the students (when they speak), this is a real problem, and we can only see what they write, although it is important to have voice chat. I asked them to bring headphones with them which would enable me to communicate with them, but the connection was very bad and the voice was not clear at all. (Teacher 1)

With regard to the voice, the teacher can hear sometimes, but the students cannot hear the student who is speaking. "The biggest problem we have when we teach online is that we cannot hear them (Teacher 6)

Other issues mentioned were related to problems with synchronization between transmission of graphic and of audio information. Because the transfer of the audio data was delayed, images did not match with what was being said:

> Sometimes students have problems with the connection so the voice does not match with what is going on the viewer, they can see my desktop so I would be explaining something and they would be listening to something I had said earlier …, so they face this technical problem, I would be explaining something but they would be watching something that I explained earlier, when I move to the next idea they would be still in the previous one. (Teacher 6)

Some students tried to log in to the sessions, but got logged out instead. This kind of problem happened especially when many students attended the sessions: "But when the server is overloaded and when you have 25 students attending, this definitely makes the connection slow, and some students get disconnected" (Teacher 4).

> When we have weak connection, it happened often that when the student logs in to the session the system logs them out constantly and some students have to quit the session altogether and miss the lesson. (Teacher 4)

At times faculty had to continue the sessions because some students had problems with their connections and were inadvertently logged out of the session. At other times faculty had to cancel the session and schedule another session, especially when faced with problems with the connection that made it impossible for the students to hear or when the whole class had problems as happened in exceptional circumstances:

> I rarely cancel sessions. I did that once or twice (when) I had a weak connection, but students couldn't connect to the internet at all so I cancelled

> the session because I couldn't have held the session without students, I had to consider their circumstances. (Teacher 4)

The university provided students and faculty with Telecentres where they could use relatively fast connections. Faculty and students reported that the situation improved when students attended from these centres. Sometimes teachers asked students to attend from the Telecentres:

"So we always ask students to attend from the Telecentres because it is essential to do so (Teacher 4).

Teacher 2 remarked:

> In the SVU we have a very good connection but some students attend from the Telecentres in other cities where the internet connection is not necessarily as good as it is here. Generally speaking the (internet) connection in Syria is not that good otherwise the communication would be at its best.

Teachers 1, 3, 6, and 7) explained how a poor connection imposed limitations on what could be done in the session. Teacher 7 said problems with voice and the connection did not help participants to take full advantage of the online sessions: "Sometimes the connection is off; sometimes the voice is not clearly heard by students, which makes it difficult to make the best out of the lecture." Although the there were many audio files in the online materials and on the web that could be used to improve student listening skills, this advantage was not always exploited since the average bandwidth could not support sound files and multimedia graphics. In the following extract, Teacher 6 described the kinds of problems she encountered when she tried to use sound clips in the online session, and how this hindered the teaching of listening:

> We actually do not always do listening. I do a small test to see if the students are able to hear so that I can play it (the recording) for them. I play all the recording for them and then do the related exercises. But sometimes, to be honest, when I play the reading I get a failure message and the computer freezes and all these things happen. So I cannot do it all the time. Only when we have a good connection I do listening.

Teacher 3 noted that because of the difficulty in playing sound files, the online lessons did not always include the teaching of the listening section in the web-based materials. Instead, students were asked to do the listening section on their own after the teacher showed them how to use this part of the web-based materials: "There are many interesting listening exercises, but technical problems make it almost impossible to do them online, we ask students to do them on their own, and I usually give my students some guidelines as how to use them (Teacher 3).

This may explain why all the online sessions observed during the study did not include the teaching of listening skills. Teacher 1 noted: "If I want to show them a video…or play an audio file for them which I have and which is not available on the web I cannot do that, we have limitations, so I ask them to listen to these things on their own."

In addition, difficulties in the use of the audio seemed to have a negative impact on the teaching of pronunciation. The difficulties regarding the use of audio chat were not always technical as faculty commented that some students did not bring a microphone with them when they attended the sessions. When having technical difficulties with voice chat, faculty tried to find "a way around" and used text chat to communicate with students: "But when the connection is slow we try to cope with the problem we have with voice chat so I try to speak and write at the same time because they cannot hear my voice clearly" (Teacher 4). Similarly, another teacher remarked: "We cannot use verbal communication so students have to write, although it would be better to have verbal communication" (Teacher 2). To communicate with each other and with the teacher, students mainly utilized live text chat as an alternative to voice chat. One teacher remarked:

> We have limitations; when someone speaks, the other person can only answer with the keyboard chat…we can do discussion through the keyboard chat…this is the only way because sometimes I suggest an idea and ask them to send me their ideas but it's slow…it limits students' conversing with each other …the only way is that the students can talk to me, the tutor. (Teacher 4)

> We have only passive listening, students listen to the teacher all the time; they can (only) use text chat. We have an option where they can use the microphone, but it is not practical to do this because of the technological problems, so we try to do without the microphone and use text chat instead unless one of the students wants to speak and it is possible for us to hear him. But even if the teacher gives the student the chance to speak sometimes only the teacher can hear him but not the rest of the class. (Teacher 3)

Although text chat seemed to offer a method for communication between faculty and students, the use of this method did not give students any opportunity to develop their speaking skills. Students cited the same technical problems that imposed limitations on the use of audio-graphic conferencing. In the following, extract one of the students explained how technical shortcomings compromised the ability to hear and understand what the teacher said:

> When we learn a new word that we never heard before, we try to listen to this word to learn the correct pronunciation and just then we have interruption in the internet connection, so we miss the word. When we try to fill the gap (in communication) the teacher would have moved further away from what he was saying (would have moved to something else). (Student 7)

This comment suggests that technical problems added to the challenge of learning a new language. Another student also referred to problems with transmission of graphic information when using the whiteboard due to the connections that became overloaded during the transfer of large files of data. The student explained how this kind of problem happens when students had a slow connection and how the situation improved when they attended from the university Telecentres (which were equipped with a relatively fast connection):

> We face problems when we attend the sessions from an internet café as the internet connection can be slow, sometimes we have technical problems, like

> we have interruption in the voice when the teacher moves between browser windows and also interruption in the viewer, we face this type of problems…the situation improves when we attend from the Telecentre. (Student 2)

5.4.3 Limited speaking practice. Students primarily used text chat as an alternative to oral interaction with the teacher and with each other in the online session. Teachers 1, 2, 3, 4, 5, and 6 believed that their students did not have enough opportunities to practice their speaking in the online audio-graphic sessions, although some teachers said they tried to use the audio with students whenever possible. One teacher tried to use text chat to teach students fluency in using the target language, but admitted that students still do not get the same opportunities to speak as they would in a regular classroom. Faculty referred to the importance of giving students the opportunity to speak, but blamed technical problems for the lack of this opportunity. A typical comment was: "I think it is crucial to allow online students to speak and express themselves, but …the connection is slow in some areas" (Teacher 2).

The teachers in the following extracts seemed to assume that the conditions of online learning do not support successful oral communication between students and the development of speaking skills: "Actually, there is one skill missing in the course. As you know the course is based on distant learning so we do not have speaking at all and this is a problem (Teacher 1). Teacher 2 remarked:

> As for practising speaking skills, online learning gives little opportunities for students to improve their speaking skills. Sometimes students have to take (face-to-face) lessons if they would like to improve their speaking skills.

Teacher 3 noted that the audio-graphic conferencing "is not the best option for teaching speaking." She went on to say:

> Students do not have lots of opportunities to speak because we have technical problems and problems with being able to hear each other, so most of the time

> we don't have speaking except when the student asks for the microphone. We also have little time; this is another reason (for voice chat and speaking).

Regarding what aspects of the target language students learn in the sessions, one of the teachers remarked: "They can practice reading, grammar, structure and writing, but they can't learn speaking due to some problems in the voice chat" (Teacher 7). Another teacher noted: "The course is very beneficial in terms of improving students" written communication skills because students type to each other and discuss through text chat so this improves their written communication skills" (Teacher 2).

Faculty said that they tried whenever possible to give their students opportunities to use the audio in order to, for example, practice their pronunciation, or ask questions or read a sentence. However, teaching oral communication skills, which require two-way verbal interaction between two (or more) students, seemed to be much more challenging. One teacher explained how his experience with implementing this type of activity was not very encouraging:

> In some of my lectures I tried to have pair work where two students use the microphone and communicate verbally. It worked well. They had a discussion about a topic which already existed in the materials, but I was not encouraged to do this type of activity with the students again… It works only if the two students who are talking have a good internet connection. (Teacher 2)

In addition to the technical problems mentioned above, teachers recited a number of other limitations and restrictions on students' verbal interaction in the online sessions. These included (a) the interaction has to be between the student and the whole class as students cannot speak in pairs or small groups, (b) it is impossible to have a conversation that is not overheard by everyone in the class, (c) students need to raise their hands and ask for the podium before they can speak, (d) when one of the students speaks the rest of the class is doing nothing, (e) the time assigned for

speaking needs to be divided between students, and (f) little time is given for each student in the session to speak, especially when there are a large number of students in the session.

Teacher 2 compared the course he was teaching with other online courses. He said one of the positive things in other online courses was that the student could raise a hand and speak immediately (without having to ask for the podium), and that he (the student) could have a private verbal communication with the teacher. Teacher 2 believed this enhanced the communication between faculty and students, but was not available in the online course that he was teaching. The issue seemed to do with the nature of the software where the conversation had to be one-to-whole class. The software did not allow for a number of audio chat rooms to be created. Teacher 2 concluded that when these features were available, together with a good connection, "the communication would be excellent." Faculty in the following extracts referred to similar limitations on verbal interaction. Teacher 4 mentioned:

> I can give the audio to students but there are limitations because students cannot all speak at the same time, so I give them the microphone in turns, they have to raise their hands first to let me know that they would like to speak. There is a feature that the student can use to show me that he is raising his hand, so I give them the microphone to enable him to speak.

She explained:

> The microphone is enabled only on the teacher's side, and it is the teacher who sends invitations, so all the rights (in the sessions) such as writing (on the whiteboard) and speaking and annotation, they are all restricted to the teacher. Students can only use keyboard chat; this is the only thing they can do (without having to first ask for this feature to be enabled).

Another teacher noted that the interaction that takes place in the session had to be student-to-whole-class type of interaction:

> Unfortunately it is not possible for the most part to have student-student conversation, but we can let one student talk to the rest of the class …I give

> the microphone to one of the students and the rest of the class listens to him. We do that very often. (Teacher 5)

In addition, simultaneous two-way verbal interaction was technically not possible as only one person could use the audio. The other participants needed to type if they wanted to interact: "We can use voice chat but we have limitations: only one person can use the audio and the other person has to answer with keyboard chat… this is all we can do" (Teacher 4).

Teacher 1 posed a number of questions regarding the use of audio-graphic conferencing for speaking, and referred to a number of other difficulties that could result from the use of verbal interaction with the students such as time limitations and the fact that when he interacts verbally with one of the students the rest of the class would be sitting and not doing anything:

> The problem is that I cannot interact verbally with all of them (the students), you can imagine when we have ten or fifteen students in the class, it would be impossible (to interact verbally with all of them), if you give each one of them one minute, it can be so tiring, it is so difficult, what can we do in one minute or in five minutes? What can the rest of the students do, the students who are sitting and not interacting verbally with the teacher, what would they be doing? I mean technically speaking it would be a bit difficult.

Teacher 5 spoke about a similar experience in the online session and compared it to conducting the same activity in the traditional classroom where all students could be involved in the activity and could practice the use of the language at the same time:

> We used to have conversations where two students had the microphone and do role play, like one student plays the role of a customer and the other the role of the assistant. This activity is achievable but the rest of the class would be sitting passively while in the traditional classroom students can speak in pairs at the same time; the conversation takes place between each two students.

Teacher 6, however, pointed out that due to the difficulties in having voice chat; she tried to teach students fluency in English through the use of text chat. According to her:

> When they (students) write they do not use the writing style, they use the speaking style. When they chat they use the same informal language that they would use if they had the microphone (therefore) using the chat box improves students' fluency even if they do not use voice chat.

She went on to say:

> Writing requires fluency; we need to have our words on the tip of our tongue. You should be always ready to use the right word at the right time, and the right tense, always use complete and correct sentences. This is a lot of practice for them especially that they do not have much chance to practice online.

This comment indicates that students used their productive linguistic skills when they used text chat. In the same way, challenges with speaking practice led to an overall impression from students that the online environment was not as good for teaching conversation as it might be for teaching grammar or teaching non-interactive listening (e.g. listening to the teacher or to audio files). Technical problems were cited as the main reason that hindered voice-to-voice communication (or two-way audio chat). Student 6 pointed out that technical problems took up too much of the online sessions, which left little time for speaking: "We don't speak with the teacher; we don't have time for speaking…the session time is not short, it (the session) lasts for a long time but we waste too much time on interruption of the internet connection and on audio problems.

This was similar to previous experiences reported by Wang and Chen (2007), where technical problems led to the loss of some valuable online time. Student 4 said the use of voice chat for communication could lead to a decrease in the quality of the connection causing "a complete disorder." The quality of the connection decreases in proportion to the number of users, such as when a number of sessions were held simultaneously by different teachers:

> This (using two-way voice chat) would slow the internet connection because the server would become very busy, this is what I am trying to say, because

> many teachers would be teaching on the same day and we have 20 or 30 teachers…so if each teacher used voice chat the server would become very busy. (Student 4)

This problem also could happen when all students in the online class spoke simultaneously (partly due to lack of social cues that regulate turn-taking as will be discussed later). This partly explained why students could use voice occasionally to interact with the teacher, but not with each other:

> We don't have a very good internet infrastructure so we cannot have a conversation class with 20 students in the class as this would lead to a connection failure of the session. But we can interact verbally online with the teacher instead. (Student 4)

In addition to limitations imposed by technical problems, some students referred to time limitations. Student 3 noted: "Probably teaching with technology requires a significant amount of time, and having 20 students in the class does not seem to help especially when it is a virtual class." Student 2 suggested scheduling extra sessions mainly for speaking, noting that "the most important thing in learning English was speaking. They should schedule extra sessions only for this purpose." Student 9 suggested that the teacher should extend the time of the session, which would allow some time for oral conversation. Other students concluded that audio-graphic conferencing was not the most suitable approach for activities and skills that required voice-to-voice interaction, especially interaction between two students. Learning English in a regular classroom had many advantages, according to some students. The student in the following extract felt that meeting face-to-face had the advantage of giving students the opportunity to hear each other, to hear the teacher "more clearly" (Student 2), and also would give students the opportunity to speak and practice their pronunciation:

> When we take the lesson in the live session we can sometimes use the microphone to read aloud and practice our pronunciation, but as you know we

> have 30 students in the class it would be impossible for all these students to speak, this is why I think that we can benefit more if we do that face-to-face as we would hear our classmates more clearly and we would hear what the teacher says more clearly as well. (Student 2)

Student 1 suggested:

> If they would like to teach us in class , this should be a regular (face-to-face) class not a virtual class, this is how it should be, for the important reason that one is interested not only in practising their knowledge of the language (structure) but also in learning how to use the language.

Student 1 added:

> Teaching the materials face-to-face can be more appropriate than sitting on the computer, listening to the teacher, taking the microphone and answering the teacher' questions. It should be a discussion class which involves both teacher and students.

Student 7 noted:

> The whole (online) session lasts only for two hours; how much time can each student get if he would like to speak? Probably 5 minutes or 7 minutes maximum, and in a class of 20 students, it is impossible for the teacher to give time to all of them. While in face-to-face language lessons you spend the two hours interacting with the students next to you and with the teacher in front of you, you literally have two hours for speaking.

This issue seemed, again, to do with the nature of the software where the conversation had to be one-to-whole class. The software did not allow for a number of audio chat rooms to be created where students could chat in pairs and practice their speaking skills. Conversations had to be heard by everyone and only one person could speak at a time, which had consequences on the amount of time that could be given to each student to speak. Students and faculty (technically speaking) were not given the same level of control over the audio feature of the environment, which resulted in further decrease in spontaneity of oral interaction (participants could not immediately and directly react to what the another said). Students had to wait for the teacher to give them the right to speak. This entailed a significant delay in real time

conversations between comment and response and between question and answer. In the following comment, one of the students explained this delay happened because verbal communication required students to raise their hands first to let the teacher know that they would like to speak, and then required the teacher to change the setting of the audio device so that the podium could be transferred to that particular student: "Even if the teacher allows us to use the microphone, there would be a delay. I need to raise my hand to let the teacher know that I would like to use the audio, then the teacher transfers the audio to me, then I speak. All this takes time (Student 8). The comment suggests that delay in response can lead to reduced spontaneity in oral interaction, and that students cannot speak immediately after they raise their hands.

5.4.4 Lack of social cues. More than half of the faculty (5 of 8 teachers) and students (5 of 9) talked about challenges related to reduced social context cues that created difficulties in areas such as turn-taking, perceptions, and impression formation, monitoring, and also led to depersonalization of online communication. Teacher 5 said that she faced problems with lack of social cues only initially, and that she tried to find different strategies to deal with this aspect of online learning. Teacher 4 noted that "lack of body language certainly constitutes a problem" but emphasized that dealing with this situation "all depends on the experience of the teacher."

Turn-taking in the absence of social cues in the audio-graphic conferencing environment was problematic. Participants in interactions communicated successfully through different mechanisms of turn-taking. However, as synchronous technology did not provide social context cues to individuals during their communication, it was difficult for students to perceive the social order and to regulate communication exchanges. Failure in turn-taking led to problems in communication (student-student interaction) such as overlap where all speakers spoke at once, or where participants

received new text from one of a number of other participants while they were still typing a reply, or where different topics were initiated simultaneously:

> Having a discussion class through the (text) chat technology that we have, and with 25 students in the class, would mean that all students type at the same time and this doesn't happen in the classroom. (In the online session) all students would type at the same time and sometimes about different issues. This makes it (the session) like a beehive (stands for chaos in Arabic) where no one is able to understand anything. (Student 5)

Student 5 suggested that difficulties in turn-taking usually did not happen in face-to-face teaching because students could use social cues to take turns:

> If we were meeting in a classroom, let's say of 10 students and the teacher, students can interact, for example when I talk to my classmate he waits till I finish before he answers, and so on. When my classmate talks to me I listen. But when all students speak at the same time […]. So it would be better if we could have a discussion class.

Student 5 also pointed out that to avoid this overlap or this "chaos," students needed to work with the teacher who orchestrates the events in the session and where they were supposed to ask questions and students were supposed to give answers. Students had to restrict themselves to centrally organized turn-taking, which helped regulate the conversation.

> (I like the teacher to correct my mistakes) because (it) guarantees the centrality of the session; rather than giving every one the freedom to ask questions and to give answers, the teacher is the one who asks and we are supposed to give answers…. Since we meet online, the session has to be (teacher) centred, and students have to consider this when they ask questions…. This is why I am saying that in general students are supposed to ask questions and the teacher is supposed to give answers, so that it (the session) would be (teacher) centred, so that the teacher would be able to manage the class.

> For example, we have 20 students in the class, when the teacher teaches us we ask him questions and he gives us answers, by this we have (teacher) centred session rather than a discussion class where anyone can ask questions and give answers. The session is conducted in such a way where the teacher explains the lesson and students ask him questions. (Student 5)

A similar comment was made by Teacher 4 who said that she would give the control feature (podium) to students occasionally (so that they could work with her on the web-based materials or speak), but she would not let students keep control all the time; otherwise, the session would be centrally managed by them, not by her:

> I can give them the microphone where they can read and ask me questions but of course there are limitations because I can't give them the microphone for a long time otherwise the students will have the control not me and of course all of us can't speak at the same time, or we would have chaos.

These comments indicate that teacher regulation of turn-taking was seen as necessary for the progression of the session. This issue may have pedagogical consequences regarding student-student interaction. For example, Student 5 said that any discussion between two students distracted their attention from what the teacher was saying, and therefore, this practice should be avoided:

> Interaction between two students is good if it is related to the lesson…if it is related to the lesson then that is a good thing… Although it is a good thing it can be a bit difficult because it distracts their attention from the lesson content…The distraction happens to the student as the teacher would not stop talking so that the two students could talk, so the distraction happens to the two students who are interacting, there is no doubt about it, the teacher may ask them a question just then, which they may not be able to give an answer to because they have not been following.
>
> Generally speaking in the session the teacher is the one who asks and students give answers…the interaction (with other students) during the sessions is a bit difficult even when it is related to the lesson because the teacher would be explaining, I have to miss parts of what the teacher would be saying in order to speak with my classmate. (Student 5)

Another area of challenge when teaching and learning a foreign language with audio conferencing was related to depersonalization of sessions and feelings of intimacy. Students were separated from the teacher by space, and in the absence of body language and non-verbal cues, online learning through audio-graphic conferencing felt less socially emotional than a traditional classroom. This issue was primarily raised by faculty, although Student 8 commented that the "feeling of

distance is very difficult," indicating that this method of communication made him feel had little social emotional bonds with the teacher and peers. Student 8 remarked that "For example, I was tested in 10 subjects without seeing the teacher but only hearing his voice."

As far as faculty were concerned, teachers 1, 7, 5, and 4 asserted they needed to create a sense of intimacy or engagement in the lesson, which could be sometimes be challenging in the absence of social cues. Teacher 1 felt that the online interaction that took place through audio graphic conferencing lacked the sense of personal identity or individual character compared to face-to-face interaction in the traditional classroom:

> In the virtual class you cannot see the students as you do in physical settings. In physical settings you deal with a student rather than a name. This is so difficult for us. It is difficult for the students and difficult for us as teachers. It requires a lot of work from us to make them feel close to us.

In spite of these difficulties, Teacher 1 tried to "touch" the students through appropriate use of voice:

> The problem is we have only our voice. So voice plays a big role; the way you speak, the way you address each student, paying attention to each student, to each name, or to each ID, because we do not know who is behind this ID…paying attention to each ID that appears on the screen, trying to touch them.

Teacher 1 also mentioned that it was important to engage students in the lesson and to create "a sense of intimacy" and closeness with them by personalising the session and by "pushing them to participate, rather than let them just sit and listen." Teacher 1 added:

> I try to push them to participate; I give them the control to put sentences in the right order… I may give them a break for five minutes where they tell me a brief personal story like something that happened with them or something they like. They do this as a class or individually. This creates a feeling of intimacy.

Teacher 7 remarked: "I don't feel detached from them (students) because of the friendly atmosphere I provide." Similarly, Teacher 5 explained that she tried to personalise the session know her students by asking them to tell her about their favourite sports, a member of their family, or another topic:

> As a teacher I do not feel that I do not know them or I never saw them before. It can be difficult at the beginning (lack of visual cues) but we are very much used to it now. I do not feel that I do not know them, I know how they think, especially students who participate and interact with me, I know how they will answer my questions, or sometimes you know about their life when they talk about their holidays or their family members or their favourite sports. So during the sessions I say for example this is the kind of sports you like, Ahmad, or this is the country you visited last holiday Ali, so this type of interaction substitutes visual interaction.

Teacher 4 said that lack of social cues definitely constitutes a problem but "it all depends on the experience of the teacher" and the teacher's ability to engage students in lessons and to know his/her students. She said "For example, I am now able to recognize students who pick things up quickly but are hesitant so they keep silent and do not participate…. So if a student is good at the subject but cannot answer, I know he has a problem and that he does not understand, so I try to motivate them and ask them to ask me questions if they do not understand and not to feel shy."

Another challenge was of maintaining engagement. A typical comment was: "My students have to interact with me; they have to communicate [with me] and give me answers" (Teacher 2). Faculty described how they used different strategies to engage students in lessons. Following is a typical response:

> We can substitute (the use of webcam) by creating a dynamic atmosphere, like when the microphone is constantly moving from one student to another, when the control is transferred from one student to the other, when students may be asked at any minute to send their comments, this makes students active all the time. (Teacher 5)

Teacher 2 stated that teachers needed to use engaging activities that did not bore students:

> Some activities are boring; students may feel bored and sleepy if the tutor does these activities with them but it all depends on the tutor and the way he teaches. We have to tailor our methods to the students' needs and to online learning, like the tutor can do multiple choices (exercises) but cannot lecture to the students. T2

This comment refers to the need for teachers to change the way they teach to meet student's changed needs in the online environment, and that teachers should ensure that students interact with them rather than just lecturing them. Teacher 1 noted that teachers were separated from students by distance, so when he asked students to read a text "It can be difficult to tell if they are reading or not because we are in different places." Teacher 1 also said he uses different methods to engage students in such an activity such as using a timer: "I use a timer and give them eight minutes, for example, to finish reading. They see the timer on the screen."

This comment shows that, because teachers and students were separated by distance and could not see each other, it led to difficulties with the teacher monitoring what students were doing at their computers. One concern was that students gave the teacher ready answers by using the automated feedback.

One strategy faculty followed to make sure that students worked out the answers on their own rather than using automated feedback to get ready answers from the online materials was to ask students why they had chosen a specific answer:

> When we do the exercises and they give me true false answers I ask them why, so they know that they have to give me a reason when they answer in a certain way, and show me how they reached this answer. This keeps them alert especially that we have a problem,…the materials we have provide answers to the exercises… like any other materials, so students can get the answer with a click of a button, so they do not have to sit and read the whole text or do the whole exercise (to get the answer). (Teacher 1)

Similarly, Teacher 4 remarked:

> For me it is not enough to receive the right answer…I ask them "why do you think this is the right answer?" and by this I put them in a tight corner …for example when we do some practice on tenses I ask them "why did you use the simple past tense?" They have to tell me for example because we have two actions one interrupted the other and they have to tell me which action was interrupted and so on …so it is not about giving the right answer, he has to explain the grammar as well.

Other difficulties included monitoring if students were at their computers at all. Teacher 5 said that it could be difficult:

> At the end of the day students can pretend that they are attending (the session) and that they are listening to you when actually they are not. If students are not self-motivated you cannot help them learn. So in the online session we are not able to motivate students as much as in traditional classroom. We have a proverb in English which says you can take a horse to the water but you cannot make it drink. So you can take them […], you provide them with all the tools but if students are not self motivated you cannot help them learn. In traditional classroom we can push them, we can reach them, and we can help them.

A similar concern was expressed by Teacher 4 who said that students may log in to the sessions, but not necessarily be at their desks during the session: "One of the disadvantages is that sometimes students log in to the session but leave their computers and go to smoke or to have a chat with another student outside." Students were isolated from each other and from the teacher by distance and sometimes by time. It was important, therefore, for students to be self-motivated. Yet, whether students were able to assume responsibility for their learning seemed to be influenced by the extent to which they were motivated to learn, rather than just meeting the requirements of the exam.

Other challenges expressed by teachers included difficulties with perception and impression formation. Lack of social cues in the audio-graphic conferencing environment hindered awareness of social context communication. Non-verbal expressions were often vital clues for teachers to recognize any difficulties students might be having with understanding and engagement in the lesson. Teacher 6 stated

that because she was not able to see her students in the class, she could not get any clues through their body language about their frame of mind or mood as she would in face-to-face meetings. She noted that:

> It is a virtual class...so the most difficult thing I face in the virtual class is that I am not able to see my students …I would know from the facial expression if they are happy or not, if they got the idea or not but the only way to know if they got the idea is to see their faces online. The problem is that communication is difficult… in the traditional classroom I see their faces and when I see their faces I can tell who got the idea and who did not, so we have more interaction. But when I do not see their faces I cannot tell if they are following or not, if they can understand what I am explaining or not.

Similarly Teacher 1 noted: "It is difficult to know who of the students got the idea and who didn't, we don't have a webcam, we can't see the students, they can't see us, we can't hear them, they only could hear us, this constitutes a problem." Comments suggest that teachers had no view of the situation each student was in when they were at their computers and had no idea about the student's frame of mind. Students referred to difficulties such as the fast pace of the lesson, or of not giving students the chance to ask spontaneous questions/

> In level 4 the teacher used to speak too fast that we were not able to follow what he said, it was like as if I was listening to a radio. I used to feel soon very bored because of that. (Student 9)

> We certainly face a problem with communication especially students who are used to conventional learning where students interact with teacher face-to-face. When the teacher teaches us from behind the screen he may say something that we cannot understand or we may not be able to ask for clarification, the teacher would be so much involved in speaking so we cannot ask her, we cannot ask for clarifications. (Student 7)

One potential reason for such difficulties may be that the teacher did not receive visual information from students, and consequently could not read their intentions or tell what their needs were. Consequently, the teacher was less likely to move through the lesson at students' pace, or to stop and let a student ask a question.

As far as students were concerned, absence of body language deprived them from assistance and added more challenges to learning a foreign language.

> Sometimes in conventional learning you can understand what the teacher is trying to say only by looking at her face, her facial expressions can be sufficient, you can understand what she says from the way she says it, and you can get what she wants to say, but when she teaches us from behind the computer screen, we cannot see her, we cannot communicate with her in person, this makes a big difference. (Student 7)

Other challenges mentioned by students 1 and 6 were related to difficulties in being engaged in learning. Student 1 noted that when teaching and learning a new language, it is important for the people involved in the process to be able to see each other. Student 1 said: "This process requires the use of the eyes." He added that when other people could hear his voice, but could not see him, he was "indifferent no matter who those people might be. Student 6 commented that in traditional environments, meeting with the teacher in person "excites a feeling of reverence" in him and promoted his engagement in the lesson.

When few non verbal cues were available in the session, students paid less attention to the presence of the teacher:

> Having voice interaction without being able to see people presents many problems –…but meeting the teacher face-to-face excites a feeling of reverence in me. When someone communicates with you online you don't have the same feeling of reverence as when they communicate with you face-to-face, it is pretty hard to explain, but it is something unique. (Student 6)

Student 6 also felt that in the absence of social cues, teachers needed to make an extra effort to engage students in the lesson:

> The teacher has to make more effort to get students to work with him on the exercises, it is more difficult than when he stands in front of us and interacts with us, he can (engage) the whole class with one gesture of the hand, it is different from teaching online where too much time is wasted.

Students 1 and 7 said that during online sessions some students would be dependent on the computer and on getting ready answers from the computer, which provided them with the correct answer. They mentioned that online students needed to have motivation to learn the language. Student 7 noted:

> One of the negative things we had was that the teacher used to assign some practice exercise which students could find the answers to in the online materials. For each exercise there is a check button that you can use to get the right answer, so you don't have to (make any effort), (because) you have the right answers so you can just copy and paste it.

Student 7 also said that students in distance learning need to be self-motivated and independent in their learning to avoid this practice:

> If your intention is to learn you do the exercise then you check them to learn from your mistakes, but if you are very dependent and don't like to make effort to learn, you would just use the check button and use the answer, your aim would be to send the solved exercise to the teacher.

Student 7 believed motivation was a first step for the success of learning with audio-graphic conferencing.

5.4.5. Limited opportunity for personal interaction. The issue of limited opportunities for personal interaction with peers was primarily raised by students and referred to having little opportunity in online learning to meet with other students for socialising or for studying or offering support. This kind of interaction was important for them. Student 5 thought there was limited opportunity for out-of-class interactions with other students because students in the virtual class did not necessarily know each other and did not have each other's email addresses or other ways of contact.

> I can interact with my classmates who are with me in the same Telecentre but not with those who attend from other Telecentres, because I can't see them and I don't know where they are attending from, I may not have their mobile numbers or their emails. But my classmates who are attending with me in the same Telecentre I can interact with them after the lecture.

Students who were in the same Telecentre had the chance to talk to each other and socialize, but they could also attend from the same centre without realizing t they were in the same virtual class or in the same level:

> Sometimes students meet in the Telecentres but last term for example there were 3 students studying with me in the same level but I didn't realize that till we had our exam. I didn't realize before that that they were with me in the same course. (Student 2)

Student 4 believed that personal interaction with other students would provide students with the opportunity to get feedback from each other and also practice their English with each other face-to-face, away from the constraints of the online environment, but might find it difficult to meet other students face-to-face:

> When we have exams students of the same level could meet and study grammar and writing. I could write a paragraph and show it to my peer and to check it for me and we could talk even if it is only for 5 minutes in English. This is the idea that I tried to work on but I didn't have good results. I tried with some students but they had a different attitude as they like to study on their own.
>
> Personally I prefer to work in a group but we have a problem with meeting each other face-to-face. It is true that we attend from the same Telecentre but one of my classmates, who was with me in the same level, used to attend from home. So if we work in a group it would be better because we would be able to communicate in English. (Student 4)

Perceptions were related to the issue of the importance of introducing students to each other so that they could socialize and offer each other support as well as offering students the chance to create social bonds with each other, which would make them feel less isolated, and make distance learning feel less distant. Other students raised the issue of having extended access to the teacher after the online session where they could see the teacher face-to-face and get immediate answers to their questions. Students seemed to appreciate the extended access to the teacher the

traditional classroom offers, and did not feel that the online environment provided a similar opportunity.

> I prefer to see the teacher face-to-face because it offers me a better way for interaction. In online session when the teacher gives us the lesson and I have something to say I can't ask him for permission to explain my idea to him because the time of the session is limited. But in conventional learning I can see the teacher after he finishes the lecture. (Student 8)

One of the disadvantages stated by students was that they did not have personal contact with the teacher after the lecture:

> When the teacher gives the lesson and I have an idea I would like to express I don't think we have enough time to take the teacher's permission to explain my idea and get feedback from him. But (in face-to-face learning) when the lecture ends I can see the teacher face-to-face immediately after the lecture, I can talk to him and ask him to explain things for me. (Student 8)

Another student explained why students appreciate immediate access to the teacher, and how instant interaction with the teacher in real time "made a big difference" for them:

> Let me give you an example. Our English teacher used to give the session from (one of the Telecentres). We used to attend her sessions online while she sat at one of the computers next to us. But we excelled in the subject she was teaching us and the reason for that is that we used to ask her all the questions we wanted straight after the session, she would use pen and paper to explain for us, it was more convenient for her. This made a big difference for us. We felt that it was better than (…). The teacher is in front of them so they can have immediate interaction with him. But for us, we wouldn't have had this opportunity if we didn't have our teacher with us in the same Telecaster. (Student 7)

Once the online session ended, the only way a student could communicate with the teacher was by email. This method of communicating with the teacher was not convenient. One reason for this inconvenience was related to the inherent nature of the tool as the communication through this tool did not take place at the same time.

5.5. Constraints of web-based language learning

The constraints of the web-based language learning environment mentioned by the participants in this study are displayed in comparison in Table 9.

Table 9. Comparison between faculty and student perceptions of web-based language learning.

Teachers' perceptions	Students' perceptions
• Students tend not to access the materials on their own • The materials do not offer opportunity for social interaction. • Students are dependent on the teacher in their study • No tailoring of future work to identified needs	• Inadequate feedback (based on reinforcement, not very helpful) • Not motivating to work alone • No interaction with peers/teacher • No analysis of weaknesses • Requires more time (time consuming) • Requires more effort • Linguistic accuracy not transferable to oral communication.

5.5.1. Lack of speaking practice. Web-based learning requires students to work alone, relatively independently of one another and of the teacher. In this type of independent learning, students interact with the computer (instructive approach). Perceptions in this category indicated a marked questioning of self study, which is based solely on interacting only with the materials (i.e. a cognitive model of learning which ignores the social dimension of learning), and of the type of materials that focus mainly on teaching structural knowledge of the language. Self study helped students study the language as a system by focusing on form and accuracy, controlled practice, repetition, and habit formation. As such, self study did not offer opportunities for meaningful communication or meaningful use of the language.

Faculty and students believed web-based learning was insufficient on its own for teaching and learning English as a foreign language. Teacher 5 pointed out that web-based learning should involve the teacher, and that this mode of learning could

not be used as a standalone approach. Teacher 5 created opportunities for students to interact and practice their oral communication, through activities such as information gap exercises. Teacher 5 argued that when students interact only with the materials, they learn English as a subject, but they do not learn how to use English in real life situations. According to Teacher 5, self study of these materials helped those: "...who would like to learn in order to pass in the exam or who look at English as a subject…they can pass and get high marks but they do not learn the language."

Conversely, when students believed when they learned in a classroom environment (with the teacher and with other students) the teacher could create an environment and opportunities where they could practice the use of the language by doing activities in which they could exchange information and construct knowledge together (as opposed to learning about the language in self study mode):

> In order to learn the language [students] they have to be in such an environment where they need to speak and ask (questions). So the teacher creates this type of environment by using gaps where each student needs some missing information so he has to ask and listen to other students and ask them questions about the information he needs and give them the information they need. So we have here what we call the communicative approach or teaching the language in an interactive way. Here students practice the language rather than study it as a subject. [Teacher 5]

Teacher 5 indicated that language learning needs, according to the communicative approach, could be met only when students met in a social environment. This view did not seem to be specifically linked to the audio-graphic medium, but instead to the types of associations she made with face-to-face settings: "In the classroom environment the teacher helps students use the language as in real life and tries to make them responsible for their learning but with the teacher's supervision (Teacher 5). Students referred to the importance of developing their speaking skills in the target language.

> Learning English would be most helpful in everyday life for speaking, especially if one would like to travel abroad or finds himself in a situation where he has to communicate in English, the most useful skill in learning English is speaking. (Student 2)

> English is good for ever thing, like when I surf the internet it would be cool to know how to do that, and it is also good for conversation and it helps in the job. I have friends who can speak English fluently. I would like to be like them. (Student 8)

> I need to know English if I want to have a job, any company would require the applicant to know English so that he would be able to communicate with the world have to be competent in English so that I would be able to work (job requirement) and the other reason why I need English is to use the Web. This is why grammar doesn't help a lot, learning vocabularies does. (Student 5)

Students in general demanded more opportunities for practising their speaking as language use provided students with command of the language. Student 1 mentioned that working on the web-based materials did not offer this opportunity because students interacted only with the computer, not with other people: "The interactive materials help you gain knowledge through individual study, but learning how to speak is something else" (Student 1). The materials helped students learn about the language and improved their language accuracy, but only practising the use of the language through speaking would give students good command of the language. Student 9 provided an example about using prepositions: students learned how to use prepositions through doing exercises, but they could not use them correctly when they spoke. This suggested that students could do the exercises well, but when it came to speaking, they could use the structures and the rules, but were not fluent. Focusing solely on the structural aspects of the language did not help students in using the language in communication. Student 4 noted:

> Working on listening skills cannot substitute practising your speaking, and no matter how much grammar you learn, your speaking skills don't improve if you don't speak…you have to work on all four skills. Now I face a difficulty

> particularly with speaking: I don't know when I will have the opportunity to practice my (English) speaking.

5.5.2. Time and effort. As was stated earlier in respect to the findings in Table 9, students tended not to access the material and work on their own, preferring only to do so in class. During interviews only students 1 and 9 said they did use the web based material. Instead, students studied the materials with the teacher in regular audio conferencing sessions and only when they worked on them with the teacher. This was the most significant factor (or barrier to language teaching and learning) in the environment. This was noted by both teachers and students, and had a number of important consequences on the teaching and learning experiences of both teachers and students. For example, it was cited by teachers as one of the main reasons why teacher spent the session providing students with feedback rather than initiating interaction among students. To do otherwise would have increased the workload of teachers and not surprisingly teachers decided to use live sessions mainly to provide students with feedback and support on language accuracy, with little or no focus on speaking activities.

One of the main reasons cited by students for not accessing the materials on their own was inadequate feedback (as discussed earlier in this section). Another reason was related to the time and effort which students need to put into self study. Students explained that when they studied on their own on the materials (rather than with the teacher), they had to make a greater effort, which made more demands on their time and could result in little learning reward. As many students work jobs and study at the same time, spending extra time on the materials was seen as inconvenient: "I don't have time. I spend my time at work so I don't have time (to study on my own. (Student 5).

Self study makes demands on student time because it requires them to search for information and explanations on their own, which they reported was time consuming. Studying the materials with the teacher, on the other hand, was "easier" for the students, and saved them effort and time that otherwise they had to spend looking up new words in dictionaries and checking the pronunciation of new words. Student 5 explained that when he studied on his own "I have to do everything." Student 1 explained that working with the teacher was more convenient because teachers "make things easier:"

> Students can study the online materials on their own but if the teacher explains these materials it would be better. But students can study the materials on their own…like when someone reads for me they make things easier for me …it is obvious...if someone reads for me it would be better than doing the reading myself…I can then read the same thing on my own to improve… but I can still manage to read on my own without someone having to read for me. (Student 1)

There was only one exception. One student expressed a preference for studying independently of the teacher. He reported that he found the self study mode more enjoyable than working with the teacher in the online sessions, describing these sessions as "boring." He particularly enjoyed the autonomy of working alone at his own pace because he did not have to be held back by the "slower" students. This student was unusual in having acquired independent study skills by successfully finishing several courses before. Another student stated he accessed the materials without a teacher, but the rest of the students in the study seemed to access these materials mainly within audio-graphic teaching.

5.5.3. Lack of independence. Faculty felt that students should access the materials and work on them on their own, which would make them less dependent on the teacher. Faculty then could focus on answering student questions or dealing with any difficulties they had during individual study. Teacher 4 said her role is to guide

and support students: "Actually, we aren't supposed to be teachers; we are more like tutors, advisors…we help them, we aren't supposed to teach them." Teacher 6 mentioned that the teacher's role was to "provide guidance," but went on to say: "Definitely the teacher in the SVU is doing more than that since our students completely depend on the teacher, which indicates that students were not used to working independently." The result was that students had less control over their learning than teachers may have wanted, and that the teacher's approach had generally been more of disseminators of information.

Teacher 4 stated that students do not have the capacity to carry out self study mainly because "their language isn't good enough," and because they lacked the skills and independence required. Faculty blamed that on the educational system in schools and traditional classrooms, which they believed made students dependent on the teacher. Teacher 5 stated that students were used to "spoon feeding" and she blamed that on the "educational system" in schools where, she claimed, old approaches in learning were adopted:

> (Students) They are used to being spoon fed. They wait for the teacher to do everything for them. The educational system in the local schools depends on spoon feeding and students are familiar only with this type of teaching. So as a teacher who teaches both online and face-to-face I face difficulties in changing students' attitude to learning, especially those who are used to being spoon fed.

Teacher 1 explained that students were used to traditional ways of teaching, and this created a challenge for him when he tried to change their attitude to learning and encourage them to be more independent in their online learning. He described his experience regarding this issue:

> (Students) They are used to face-to-face teaching where the teacher tells them what to do…Actually I face difficulties with students in this regard like they ask me to send them grammar files or notes about what was taught in the

> session. They ask me to do that even though the recorded sessions are available and they can download them and listen to them, and even the notes that we use in the sessions to explain things are available in the online materials…I give them websites so that they would be able to do more practice if they like to, only to find out when I check in the following session that very few of them have done that.

A similar experience was referred to by Teacher 6 who noted that students were very unlikely to practice (even to do the controlled practice) without teacher's support:

> No one of the students ever asked me to leave him an exercise or a unit so that he can do it on his own. On the contrary, I sometimes assign them something to do at home, like I tell them this is a very easy exercise and we did many exercises like this one so we do not have to repeat things again. But after two or three sessions I feel surprised to find that some students tell me "Miss, this exercise you did not do for us at all". They are not able to do it alone although we would have done similar exercises.

The web-based language learning environment provided students with a listening section where they could listen to recorded files and work their listening skills (non-interactive listening). The library included links to selected listening resources on the Web. However, Teacher 6 pointed out that many students did not take advantage of these files to improve their listening:

> We have a broad range of resources …But I have to say that if I do not help them practice these things in the sessions, very few students do practice them outside the sessions, very few students do listening exercises or try to improve their listening skills or their reading skills by referring to certain websites for example, or utilising other resources. They depend on the teacher instead and do not go beyond what the teacher gives them, just like what happens in schools.

If students did not use these files to improve their listening, the only way to improve their listening is through the online sessions. Teacher 1 remarked: "As for listening, if they do not work by themselves the only way to improve their listening is by listening to the teacher during the session."

Helping students adopt a new role and change their attitude to learning was a strategy that some teachers followed, but felt that this process usually took time because students could be resistant to applying any approach that required them to be more active in their own learning, but also because students lacked the skills required for the new approach. Teacher 6 commented that teachers need to support students in their learning and help them reach a certain level where they could depend on themselves:

> So (students) they need to reach a certain level of understanding and be able to depend on themselves in their study. Without reaching this stage it can be so difficult and many problems can happen and even they may learn things in the wrong way. So the teacher needs to take them little by little and reach with them to a certain level. Let's say the teacher (provides) guidance.

5.6. Constraints related to asynchronous written CMC.

Faculty and students had similar perceptions of the disadvantages of written CMC as shown in Table 10.

Table 10. Comparison between faculty and student perceptions of asynchronous written CMC.

Teachers' perceptions	Students' perceptions
• Time consuming • Requires technical support • Teachers are not aware of the forum • Difficulties in monitoring students • Requires language skills	• Delay in asynchronous interaction/emails

5.6.1. Lack of support. Perceptions, attitudes, and lived experiences in this category were related to the use of the discussion forum in the online environment. The discussion forum was not used in the course, but teachers 3, 4, and 5 had used the forum in previous courses and talked about their experience of using this medium.

Although these teachers seemed to be aware of the benefits of the discussion forum to cater to different learning needs, they experienced difficulties and challenges that seemed to have led them to stop using the forum in the target course in the present study. In addition, Teacher 4 referred to lack of experience on the part of new teachers that contributed to the "negligence" of the forum in the present course. In the following extract she asserted that new teachers were not familiar with the forum and with its pedagogical benefits:

> We used (the forum) it before but a new group of teachers came and it became neglected but we activated it again… The rest of the tutors left and new staff came, they do not know anything about the discussion forum so they don't feel it is that important.

She also referred to the issue of technical support, noting that when she used the forum in a previous course she had to activate it herself by "manually" linking all the students in the class to herself, which was a technical job usually done by the technical team:

> Now we tried to activate (the forum) it but we didn't have IT staff in the University…you need to connect the classes…you need to connect all the students in the class with the teacher and with the advisor or the supervisor so it is all manual work and we didn't have enough people to do this job so I had to do it myself although it isn't my job, I worked like an IT staff and did the activating. (Teacher 4)

Similarly, Teacher 3 noted: "It is a new idea so teachers had difficulties accessing the discussion forum, they did not have enough time to activate it."

Using the discussion forum was described as time consuming not only because teachers had to activate the forum themselves, but also because facilitating the discussion in the forum could be very demanding as it required a great amount of time, organization, and preparation on the part of the teacher. Teachers 3 and 6 explained how they needed to do "a lot of follow up" by logging in to the forum frequently and responding to the posts, and also motivate students and prompting them to participate:

> (The) discussion forum is very useful, but needs a lot of follow up on the part of the teacher and the students. We used it before to post topics for students to discuss, it is a very good idea and it is useful for the students but putting it in practice can be difficult sometimes. (Teacher 3)

> In two of our past courses we had a forum and students used to join this forum and discuss certain topics in English. It was time consuming and not all levels were able to do it. So it was a big burden on the tutor. We are under pressure to finish the syllabus … It (the discussion forum) needs a lot of time and it adds more load on the teacher, because he has to prepare the topic and log on regularly to the forum and read all the responses and correct their mistakes. Let alone that if the students are not serious, they do not bother to participate. (Teacher 6)

The latter refers to concerns about faculty being overloaded when they use the discussion forum. The forum is a "big burden on the teacher because they were required to teach students a certain amount of material during the time of the course, and using the forum could make more demands on teacher time. Generally speaking, the perceptions expressed in this category showed the importance of providing teachers with different types of support (e.g. technical support, training, etc) for the use of the discussion forum to be successful. None of the teachers said not using the forum limited the support provided to students by the teacher. Instead, faculty mentioned that they used other media in the online environment. For example, although one of the teachers provided students with support through the forum in previous courses, she said support could still be provided to students by email. Similarly, Teacher 4 noted that this kind of support could be provided through audio-graphic conferencing where online sessions were held regularly in real time. Teacher 4 said that email helps her to keep in touch with students even though the teacher is away from them:

> Since we are not meeting face-to-face, so (online learning) it can be kind of maybe dry like you don't see your instructor or whatever but I see that email is a very positive thing, you can stay in touch provided that the instructor uses it properly… you can keep in touch with them (students).

5.6.2. Monitoring. Emails were used in the course for general communication between students and teachers. In some cases, they were also used in the course as a means to encourage and support collaboration between students as well as to encourage written communication between students in the target language. In this case, students were required to work in twos or small groups on a project or a collaborative work, which is an assessed piece of written work. Because the teacher could not monitor the interaction between students, he/she could not always guarantee that the communication took place in the target language. This was seen by some faculty as a disadvantage as students were likely to use their native language during their communication:

> We have a project; each group of students does a project together so in the project they have to do a lot of correspondence through email. But there is no way I can tell that they use English in their communication. I ask them to use English when they send each other emails but I can never tell. (Teacher 6)

> We have what we call class project. We divide students into groups of twos or threes and each group has to submit a project which is assessed. So we have interaction but we cannot make sure that students use English when they interact. So we cannot tell if it serves the purpose because the two students (in the group) are supposed to interact (in English) but they may send emails to each other in Arabic instead and they may speak to each other on the phone in Arabic. (Teacher 1)

Teachers asked students to send them copies of the emails they exchanged when they carried out their projects so they (the teachers) could make sure that at least part of the exchange took place in English, but this did not solve the problem altogether as the following teacher noted:

> I ask them to send me copies of the emails they exchange so that I would be able to know how much interaction took place between them. But they can still send each other emails in Arabic from their private accounts instead of sending them from the SVU account, or they can meet with each other if they are from the same city or in the same country. They manage to do that in one way or another. (Teacher 1)

5.6.3. Delay in asynchronous. One of the disadvantages of the use of the online environment in language teaching and learning was that students did not have asynchronous extended access to the teacher. Once the online session ended, the only way a student could communicate with the teacher as by email, but communication through this tool did not take place at the same time. The inconvenience was because some students did not have internet at home, and therefore, had to search for an internet café or any place where they could access and use the internet to send emails to their teacher:

> When we had to enquire by email about a problem regarding the homework or the project, we sometimes didn't receive an answer. This way (when meeting the teacher face-to-face) we don't have to search for an internet centre and send her an email and wait for the reply, we immediately had the answer in-person instead, you ask, you get the answer, and it is done. (Student 7)

Student 1 noted that some students preferred to meet in real time with the teacher in the session and get immediate answers to their questions rather than communicate by email:

> In the online sessions students can ask the teacher questions , I don't have to ask him by emails and wait for one or two days to receive a reply…the teacher is available for one hour and a half during the session.

This did not seem to be as convenient as getting immediate response from the teacher in face-to-face interactions.

5.7. Conclusion

Findings from the interviews were presented in this chapter. The objective of this study was to learn more about the opportunities and constraints of the different formats of CMC, with specific focus on audio-graphic conferencing. Data were collected from faculty and students with regard to perceptions, attitudes, and lived experiences of teaching and learning of English in the online environment in general and through audio-graphic conferencing. The following chapter provides a discussion

of the findings Chapter 4.0 and 5.0 in the context of previous literature and theory. Conclusions are drawn, and recommendations for action or further research are offered.

Chapter 6.0: Discussion and Conclusion

Chapters 4.0 and 5.0 contained findings from the observations and interviews. Methodological considerations of the study and a discussion of findings in the light of the literature review provided in Chapter 2.0 are presented. Conclusions are drawn. Recommendations are made for action and further research.

6.1 Research questions and methodology

The primary research question that guided the investigation was:

RQ: Can the online environment support English language teaching and learning in the Syrian Online University?

Subordinate research questions were:

RQ1: What is the nature of the current online environment?

RQ2: In what manner is the online environment used by faculty and students in the English programme at the Syrian Virtual University?

RQ3: What are faculty and student perceptions of the opportunities provided by the online environment in the English programme of the Syrian Virtual University?

RQ4: What are faculty and student perceptions of the constraints of the online environment in the English programme of the Syrian Virtual University?

Of particular concern were the opportunities and constraints of the online environment according to the experience of faculty and students. Data collection was accomplished through observations of the web based environment and target online class in action (Chapter 4.0) followed by both the use of a qualitative survey questionnaire , and interviews of both faculty and students (Chapter 5.0) engaged in a course of English language instruction. The virtual environment was explored in depth through the perceptions, attitudes, and lived experiences of the participants. In particular, audio conferencing, which can provide a high quality medium for teacher-

student interaction, was explored. Audio conferencing in an online environment provides personalized feedback and support for students and for developing fluency in writing. Audio conferencing also supports exchange of text with the teacher, and to a certain extent, with other students in the same course.

6.2 Primary research question: summary of findings

The online environment investigated in this study offered venues for online interaction, both written and spoken. These venues included a discussion forum, emails, instant text chat facility, and an audio-graphic conferencing program that integrated tools for synchronous online communication, both spoken and written. In addition to this sophisticated synchronous and asynchronous CMC, the online environment included automated web-based materials, which included many drill-and-practice activities as well as activities that focused on improving students' written communication skills.

Students and teachers cited the certain advantages of teaching and learning with audio-graphic conferencing in language teaching and learning. Advantages included flexibility of synchronous learning, learning in class, easy access to online resources and information, independent learning/absence of teacher, mastering and practising language structure, teacher support, student-student interaction, and opportunities. Disadvantages included lack of social cues, technical difficulties, automation discouraging to participation, lack of practice speaking the target language, lack of time to interact as needed with teacher, and others constraints, The first column in Table 11 summarizes the findings in the literature from Chapter 2.0, the second column summarizes the opportunities perceived by faculty and students, the third column summarizes the constraints as perceived by faculty and students, and the

fourth column summarizes the findings of the present study. Discussion of the cited elements in relation to the research questions follows.

Table 11 Summary of the views in the context of the study.

Views n the Literature of the Opportunities and Constraints	Opportunity	Constraint	Study findings
training and rationale	Training is an opportunity when it focuses on using technology to serve pedagogy	Lack of training is a constraint; when training focus on using technology simply to replicate face-to-face situation or do what the computer can do.	audio conferencing were used for pedagogical reasons, i.e., to support instructional teaching
Social cues	Lack of social cues encourages participation of shy and less verbal students	Lack of social cues has implications on social presence and consequently on interaction	Little research has been conducted on audio conferencing tools that do not use webcams. In this study, Lack of social cues reduced discrimination and encouraged equality in participation. Some did not feel comfortable with lack of social cues but other did. However, participants developed methods to compensate for social cues and facilitate interaction.
student support	Teacher support students when they leave didactic tasks to technology and focus on student interaction	Teacher support is inappropriate when they do what technology can do. Teacher-student interaction is similar to	Teachers provided more than a basic level of pedagogic support. Most students depended on teacher rather than worked independently on interactive materials

		interaction with computers	
student characteristics	Independent learners facilitate the use of technology in education	Dependent learners hinder the use of technology	Low level of language proficiency and over-reliance on teacher impact on students independence
technical issues	reliability of internet connection support successful audio-conferencing	Lack of support and inadequate infrastructure may lead to failure of video conferencing session	Technical support was available and helpful, but Weak connection hindered the use of audio-conferencing for dialogue and verbal communication. The interaction was mainly text based.
computer literacy	Training on the use of technology provide an opportunity for both teachers and students	Poor computer literacy impact on the ability to use technology	Basic training on the use of technology was provided at the beginning of course. Professional Technical support was available throughout the session
time commitment	Students' commitment to their study supports a successful learning experience	Life commitment of online students can impact negatively on learning	Most students work and study at the same time. They coped with the help of teacher.
Speaking fluency	Video and conferencing has potential for teaching speaking	Students in distance and online learning have no or little opportunity for practicing speaking skills	Teaching speaking through audio conferencing is challenging
Writing skills	Asynchronous interaction provides students with the opportunity of improving their	Discussion forums require time and effort on the part of teacher	Emails were used to improve writing skills but teacher time commitment did not help them use discussion forums

	writing skills		
accuracy	Students need to learn accuracy and structural knowledge of the language	There should be a balance between accuracy and fluency	Automated and continuous gives students the opportunity to improve their accuracy and structural knowledge of the language
Flexibility	Asynchronous interaction offer time and place flexibility	Live interaction lack time flexibility	flexibility of live sessions is enhanced
Personalized feedback		Lack of software that focuses on personalized feedback	Automated materials focus on drill- and-practice feedback but audio conferencing gives teacher the opportunity to give students personalized feedback
Support	Discussion forums can be used to create a sense of community	distance students feel lonely	Discussion forums are not used but audio conferencing and emails are used instead
Spontaneity and immediacy	Audio conferencing supports spontaneous and immediate oral communication	asynchronous communication lacks spontaneity and immediacy	Instant text chat is immediate and spontaneous but oral communication is not.
Pedagogic concerns	Student centred interaction is required for fluency	Teacher cantered is a constraints	Teacher centred is a constraint due to technical and turn-taking difficulties.

In Chapter 2.0, the existing literature associated with the areas of distance and online learning, theories of learning and pedagogical perspectives, language learning, and computer technology, were reviewed. Results of studies cited suggesting a blended learning approach that combines more than one learning strategy will be reflected upon in the following discussion. Specifically, this discussion suggests that

the combination of the etiquette of audio conferencing with the potential of interactive materials (web-based learning) such an approach has the potential to significantly enhance the learning experience. According to this approach, the online learning environment can support foreign language learning (or can be said to be successful) when these environments are used to their best potential to meet different language learning needs and objectives based on sound pedagogical principles. From the perspective of this study this means that:

> Such an approach would uniquely exploit the full capacity of both static and dynamic technologies. It would on the one hand expose learners to sophisticated automated activities, engaging them in autonomous, predominantly cognitive, and meta-cognitive processes, on the other, with the help of networked systems; it would involve them in collaborative, process-oriented real life activities fostering psychological processes. (Felix, 2005: 21)

This synthesis of views from different schools of thought requires employing different online learning formats and modalities, that is, synchronous and asynchronous CMC for written and spoken interaction, in addition to automated web-based materials. Each of these formats and modalities has its significant value and should be exploited to the best of its potential to meet a range of instructional objectives (Niederhauser and Stoddart, 2001; Salaberry, 2001; Zhao, 2003; Koehler and Mishra, et al., 2007; Koehler and Mishr, 2009).

The online environment that was investigated in this study offered venues for online interaction, both written and spoken. These venues included a discussion forum, emails, instant text chat facility, and audio-graphic conferencing program, which integrated different modes and modalities tools for synchronous online communication both spoken and written. In addition to these sophisticated synchronous and asynchronous CMC (modalities), the online environment included automated web-based materials that included many drill-and-practice activities as

well as activities that focused on improving students' written communication skills. Niederhauser and Stoddart (2001: 29) pointed out that such variety of online learning formats, modalities, and software programmes can be used to address different educational purposes and learning goals. For example, drill-and-practice and tutorial software can be effective in helping students develop specific skills. Interactive, exploratory tool software can support teachers as they implement reform-oriented constructivist practices (Niederhauser and Stoddart (2001:29). In this approach, learning is not restricted to passive reception of knowledge and to drill-and-practice activities, but draws on prior knowledge and experience and on social interaction and takes place through active construction of meaning and knowledge.

For teachers to exploit the strengths and affordances of a specific technology, they need to know the inherent functions of this technology and use it in a way that is consistent with this function (Zhao, 2003). This is not to suggest that teachers should use approaches that do not necessarily fit with their existing pedagogical beliefs, or change their approach of teaching even if they do not want to. Rather, the discussion above suggests that, for example, the teaching practices required for the smooth running of video conferences may hinder developing appropriate communication skills because it requires the use of a behaviourist approach, whilst the acquirement of these skills and of knowledge and understanding require a socio-constructivist approach.

During the socio-constructivist approach, social interaction between teachers and students and between students among themselves definitely needs to achieve learning objectives that are different from those that can simply be achieved through student interactions with computers (in this study, through interactive materials or CALL programmes). Computers cannot do what teachers can do when teachers set

different learning objectives and work to achieve these objectives using different modalities. The perceptions that were expressed in this study showed understanding of the use of technology in English language learning, and that the implementation of the new pedagogical principles required a change in faculty and student roles.

One of the characteristics the online environment offers is automated feedback and interaction, which improves student accuracy and structural knowledge of the target language. However, automated feedback and materials are not enough in the sense that they lack two dimensions: personalised feedback, and focus on speaking fluency (or the communicative competence). Specifically, audio and video conferencing were introduced to language learning as they were believed to support social interaction, and therefore, offered students opportunities for improving their communicative competence. Results show that audio conferencing was successfully used for providing students with personalised feedback and with pedagogic and emotional support. However, results also showed that teaching speaking faced serious challenges mainly related to technical problems, but also to lack of faculty time, lack of self turn-taking, in addition to pedagogic concerns.

The following sections contain a review of the results as they relate to the research questions including detailed discussions about the opportunities online environment has to offer when implementing audio conferencing with relation to support, personalised feedback, and fluency in writing. A discussion of the constraints is incorporated; factors that did not help faculty or students exploit what the environment had to offer to facilitate teaching and learning oral and communication skills in the target language. These constraints included technical difficulties, difficulties in self turn-taking and pedagogic issues.

6.3 Research question 1: What is the nature of the current online environment?

The key elements in relation to the nature of the online environment were related to content of teaching materials, potential of audio-graphic technology, technical difficulties, and pedagogy. The environment contained two main modes of learning: automated materials, and audio conferencing. One aspect of the answer to this research question was related to accuracy and automated feedback.

There were many benefits that students gained from accessing the materials and working on them on their own. One of the essential advantages of autonomous feedback was that it offered continuous feedback that would have been be difficult or impossible to provide during student-teacher interaction. The interactive nature of the materials allowed students to work on improving their accuracy in the target language and to study independently of the teacher at any time they wished. Findings showed that students seemed to like the focus on linguistic accuracy that the materials promoted. Similar findings were reached by Felix (2001a) where one of the advantages stated by students of web-based learning was that the interactivity feature of web-based learning allowed them to repeat the exercises as many times as they wished. This was perceived by faculty to be an advantage to what could be done by a teacher in a classroom. Felix (2003b: 169) described the advantage of feedback offered by such programmes:

> Computers will tirelessly continue to give anonymous feedback, independent of moods and personal relationships, and independent of time and place […] automated feedback can be more frequent and directly linked to very small achievements. (Felix, 2003b: 151)

Because web-based materials supported automated interaction was seen as being of special importance to second and foreign language teaching. Findings were

also consistent with findings in the literature that students, in general, show appreciation of learning structural knowledge of a target language. Felix (1999: 10) asserted "mastery of structures remains a popular goal: students are constantly surprised by their interest in grammar drill-and-practice."

In addition to synchronous text-based chat facility, the online environment was integrated with tools that provided avenues for asynchronous written social interaction such as the discussion forums and email. I n addition to this written mode of communication, the materials included activities that focused on written interaction and on meaningful social communication that was carried out in a way where students could interact with each other rather than with the computer. The emphasis in these writing activities was on construction of knowledge, which contrasted and conflicted with the transmission mode in the audio conferencing environment.

There are many advantages of the asynchronous text-based discussions that take place through virtual avenues such as discussion forums and emails. One advantage attributed to written CMC is related to developing certain learning skills particularly through the use of discussion forums where participants can read each others' messages and reflect on them (Shetzer and Warschauer, 2000). This helps students develop their critical thinking and negotiation skills (Garrison and Anderson, et al., 1999; Hawkey, 2003; Marra and Moore, et al., 2004; Shetzer and Warschauer, 2000). In addition, the exchange of written messages and comments through the discussion forum could help students develop their writing skills (Bartolic and Bates, 1999; Hartman et al., 1991; Kern, 1995; Ortega, 1997; Warschauer, 1996b; see also Lewis and Chanier, 2011).

Another opportunity for the automated materials is that they include activities that require social interaction in writing. It is vital in language learning to offer

students an opportunity to use the target language communicatively. The communicative use of language requires some form of social interaction that can take place in speaking and/or writing. The online materials website offered students opportunities for written communication and discussion that had many advantages in terms of learning outcomes such as developing fluency in writing and promoting critical thinking. The online materials included activities that focused on meaningful social communication that needed to be carried out in a way where students could interact with each other rather than with the computer. Each unit in these materials included a message-focus practice activity that encouraged a written dialogue among students.

These student-centred activities were structured to require students to think about certain issues and then post their contributions and opinions on the notice board. For instance, in one of these activities students were asked to weigh the pros and cons of having the Olympic Games in their cities and to support their argument convincingly, then post their contribution on the notice board. Students were also encouraged to read each other's thoughts and ideas and to respond to them. Involving students with activities that required student-student interaction was based on socio-cognitive principles informed by theorists such as Vygotsky (1978) and Dewey (1963) who emphasized the importance of the social aspect of learning.

The environment included online materials that were stored on a server that allowed an authorised user to access these materials over the internet. The observation of the web-based materials showed that these materials were of the drill-and-practice type that offered feedback based on reinforcement and memorization. It offered students opportunities for interaction with the computer that played the didactic role of a teacher who judged student performance and corrected their

mistakes. This type of interaction was characterized by the initiation-response-feedback pattern.

This strategy of doing tasks in a structured and systematic way lends itself to the behaviouristic principle that states that "if skills and sub-skills are taught in the right order, in a systematic and comprehensive manner, then effective learning will occur" (Reeves et al,, 2002: 563). This indicates that lack of understanding of meaning is less important than the ability to effectively imitate, memorize, and respond to model dialogues. This reinforcement technique suggests that students should depend on memorisation and rote learning of linguistic consents, word forms, and rule usage, and on repetition and practice of language items, rather than on deep knowledge and critical thinking, to get the answers right.

The repetitive nature of the materials can also be seen in the review quizzes and tests provided at the end of each unit. These quizzes have a restart option that enables students to repeat the test several times and receive their score upon finishing these tests, and also receive feedback that indicates their progress. The repetition strategy is used to help students achieve precision. "Repetition is seen as one of the greatest means to skill acquisition" (Handal, 2003). Repetition is one of the typical strategies used in behaviouristic pedagogies and behaviouristic computer assisted language learning (Warschauer 1996a). It is based on the belief that all types of behaviour, including language, can be eventually learned through the manipulation of external conditions (Handal and Herrington, 2003) a consistent positive/negative reinforcement.

The computerized interaction in the present study was consistent with the behaviouristic use of the computer (Warschauer and Kern, 2000:13; Niederhauser and Stoddart, 2001) where the computer was perceived as "a mechanical tutor which

never grew tired or judgmental and [which] allowed students to work at an individual pace" (Warschauer and Healy, 1998:57). This description was also similar to the pattern summarized by Niederhauser and Stoddart (2001: 18): "The computer displays a problem for the student (stimulus) who, in turn, responds with an answer (response). The computer then provides feedback to the student regarding whether he or she has provided the right answer (reinforcement)"

This approach had its own advantages in terms of focusing on improving student accuracy, but the drill-and- practice format was inadequate in the sense that it lacked the oral communicative element required for producing spontaneous grammatical utterances and sentences. In addition, this system did not have the capability to recognize verbal input or generate authentic and genuine communication with students (Forbes-Riley and Litman, 2006). The possibility of teaching speaking through tutoring systems and computerized feedback was therefore limited. The issue of catering for this communicative aspect, the development of communicative speaking skills in the target language, has long created challenges in the use of technology in language learning (Chen and Wang, 2008; Hampel, 2003; Felix, 2004; see also Coburn, 2010 and Hopkins, 2011).

Materials did not include speaking activities. Computer feedback was limited in two ways: it lacked the oral communicative element, and it was not personalised or humanised, to wit, the materials did not include activities that required specific oral communication to be completed by students, nor were the materials integrated with built-in features and venues where spoken student-student interaction could take place. The learner is not offered any chance to practice the use of the language with other learners through social interaction. Instead, the online environment only provides a tutoring system or what Cushion (2000: 112) termed a “built-in, teacher-centred

authoring tool" that delivers the materials, corrects students, provides them with knowledge, and controls the learning process. The pedagogical assumption on which such an approach is built "assumes that students can learn by passively receiving information from teachers and that computers can transfer knowledge to students as teachers do," (Wang, 2002: 73). Such systems do not have the capability to recognize verbal input and generate authentic and genuine communication with students (Forbes-Riley and Litman, 2006).

Researchers (Harasim, 1990; Hawkey, 2003; White, 2003; MacKinnon, 2013b; Guth, Helm, and O'Dowd, 2014) argue that, for learning to be successful, faculty should adopt the socio-cognitive approaches where one of their main roles should be to create opportunities for student interaction and to facilitate the communication process among students. Faculty and student perceptions about the extent to which the online environment in general and audio conferencing in particular can support this approach are elaborated in the discussion below

6.4 Research Question 2: In what manner is the online environment used by faculty and students in the English programme at the Syrian Virtual University?

The use of video conferencing in online learning has increased over the past decade. Previous studies have focused on the use of video conferencing in education for a wide range of issues. Some institutions use audio conferencing rather than video conferencing for different reasons such as the nature of their available infrastructure and financial reasons. Observations and interviews show that adding the audio-graphic component to the online English language course was a responsible procedure with benefits for providing guidance, support, and improved quality of feedback.

One difference between communication that takes place through video conferencing setting and that which occurs through audio conferencing is that some or

all of the social cues available in the former via webcams, such as facial expressions and gestures, are often missing in the latter. The absence of webcams in audio conferencing reduces the availability of social cues. The most observable gap in the results of the present study was the extent to which the lack of social cues, especially body language and non-verbal behaviour, impacted social communication that takes place through audio conferencing. Results showed the communication through audio conferencing was based on text and lacked both verbal and nonverbal cues such as facial expressions and gestures. Often, students listened to teachers and responded to them in writing rather than verbally.

These findings emphasize the ability of individuals to compensate for a lack of social cues and acknowledge the need for an active role of participants in online interactions and their need to create social relationships and personal impressions in reduced cues environments. This is consistent with the view of Gunawardena (1995: 147) found that, although CMC offered few social context cues "it is the kind of interactions that take place between the participants, and the sense of community that is created during the conference, that will impact participants' perceptions of CMC as a "social" medium." Communicators are just as motivated to reduce interpersonal uncertainty, form impressions, and develop affinity in on-line settings as they are in other settings. This is not to suggest that communication in reduced cue environments are as good as face-to-face environments, but findings supports views that participants in online interactions compensate for the lack of nonverbal cues and exchange social information by using alternate methods available through audio-graphic conferencing.

Audio-graphic conferencing "supports modes of communication, which are semiotic resources constructing discourse in interaction, such as textual, speech, graphic, and iconic" (Ciekanski and Chanier, 2007: 6). The concept of multimodality

has been widely used to contribute to a better understanding of multimodal environments. One tool is audio-graphic conferencing, which allows for multiple formats of interaction: audio, video, text, and graphics, resulting in multimodal networked environments

The absence of webcams in audio conferencing reduces the availability of social cues such as facial expressions and gestures. In Chapter 2.0, social cues theories were discussed and the importance of social cues for behaviour management, turn-taking, and social presence were highlighted. Results from this study were focused on the opportunities and constraints of using various modes and modalities of communication and semiotic resources in the context of audio conferencing. The effective use of audio conferencing, from the perspective of this study, can be achieved through the use of alternative modes of communication and semiotic resources to manage behaviour and turn-taking and to create social presence, all of which facilitate social interaction and communication and help faculty to support students and to give them personalized feedback.

The richness of semiotic resources (textual, speech, graphic, iconic, and others) requires the organization of the different modes of communication such as chat, whiteboard, raising hands, documents, etc.), to achieve the learning objectives. Findings study support views that participants in online interactions compensate for the lack of nonverbal cues and exchange social information by using the alternate methods available through audio-graphic conferencing.

Personalised feedback provides opportunities on the pedagogic level. Meeting in real time with faculty helps students emotionally and prevents them from the feeling of isolation, which causes them to drop out of the course. Faculty support

through synchronous meetings and through email is appreciated by students. Effective use of audio conferencing can be achieved through the use of alternative modes of communication and semiotic resources to manage and facilitate social interaction and communication. Audio conferencing provides opportunities for developing student's writing skills. As well, the tool was successful and effective when it was used for providing humanized feedback (as opposed to right/wrong type of feedback), when faculty made the automated activities more personalised in nature than the traditional drill-and-practice approach. Faculty used techniques such as eliciting answers, giving hints, personalising answers, using images and realia, using annotations, offering explanations, and other humanizing factors to guide students to answers. These actions were manifested through text chat and audio chat in addition to other modes and modalities such as use of word processors, whiteboards, websites, and emoticons.

Faculty also used audio-graphic conferencing to provide students with different types of support that included showing students how to use the materials, teaching the materials in manageable parts, and offering guidance on how to use external websites for language learning.

On the other hand, results showed that audio conferencing can be particularly challenging for teaching speaking. For this tool to support language teaching and learning, teachers should endeavour to use this tool to create a learning structure that facilitates the communication process in the target language among students and to provide students with direct experience in using the target language. The use of audio conferencing brought a new role to faculty, a role that was based on sociocognitive approaches (Chizmar and Williams, 1979; Collins, 1979; Harasim, 1990; Hawkey, 2003; White, 2003). Observation of the online sessions that were conducted through

audio-graphic conferencing showed there were serious challenges when this tool was used for developing speaking skills and fluency.

Due to the limitations in computerized interactions in terms of teaching students oral communication skills, and the limitation in developing oral fluency in the target language in online learning in general, audio-graphic conferencing was introduced to foreign language teaching and learning. Indeed, it was thought by researchers that video conferencing, in particular, would provide a high quality medium for social interaction, and therefore, offer a potential solution for limited oral interaction in online language courses when used as best practice (Rosell-Aguilar, 2005; Hampel, 2003). Best practice was described as "using the most appropriate tools to their best potential to achieve sound pedagogical processes and outcomes" (Felix, 2003: 8). The interpretation of Felix's definition of best practice is important in the context of audio conferencing since it incorporates the concept of multimodality. The richness of semiotic resources in this environment (textual, speech, graphic, iconic, etc) requires the organization of the different modes of communication (e.g. chat, whiteboard, raisin hand, document etc) to achieve the learning objectives. The concept of multimodality has been widely used to contribute to a better understanding of multimodal environments. Multimodality can be defined as:

> The use of several semiotic modes in the design of a semiotic product or event, together with the particular way in which these modes are combined –they may for instance reinforce each other [...], fulfil complementary roles [...] or be hierarchically ordered. (Kress and Van Leeuwen (2001)

Findings showed faculty used different modalities to respond to the unique needs of language teaching in the context of audio conferencing. The effective use of audio conferencing, from the perspective of this study, can be achieved through the use of alternative different modes of communication and semiotic resources to

manage and facilitate social interaction (teacher-student interaction and student-student interaction) and communication, and assist teacher support of students and to provide them with personalized feedback. In sum, findings revealed that the demands of the virtual classroom can be particularly challenging for teaching speaking.

Additionally, limited speaking practice was in part related to a number of difficulties in the use of voice chat. As a result, text chat was used by faculty in addition to voice chat for real-time interaction with students. Instant text chat provided students with access to each other where they could exchange ideas, ask each other questions, and solve misunderstandings. The observation of faculty practices in the online sessions showed that, in some cases, faculty tried to initiate teacher-led discussions between students using text chat. The use of text chat to develop student fluency through teacher-led discussion was an attempt by teachers to cope with the limitations of the use of audio-graphic conferencing for real-time interaction and for teaching speaking.

Teachers tried to cope with the limitation of voice chat and used text chat where, according to one teacher, the communication resembled that used in oral interaction, and therefore, was used for developing student fluency in the target language. Findings show that teachers tried to exploit the different modes and modalities that were available in the online environment to support English language teaching, which was in line with the recommendations that teachers should find successful ways for teaching with technology (Zhao, 2003).

The use of text chat to develop student fluency in the target language was faced with two concerns. First, teaching students fluency through text chat was based on the assumption that students used their productive linguistic skills when they used text chat. In the interviews, faculty referred to the importance of teaching verbal

fluency through text chat. The effort made by faculty to teach students fluency in writing through text chat was considered by some as a good practice as it improved student's text based communication. An important question here, however, is whether text based communicative skills, or written communication skills, are transferable to verbal communication. Studies on this issue only cite that communicative skills acquired in a written environment hold similarities with oral language. Pellettieri (2000: 59), for example, claimed that synchronous text chat "bears striking resemblance to oral interaction (see also Biesenbach-Lucas and Weasenforth, 2000; González-Bueno, 1998). An important question, however, is whether these skills "may gradually be transferred to spoken discourse competence: (Chun, 1994, as cited in Hampel and Hauk, 2004: 67).

6.5 Research question 3: What are faculty and student perceptions of the opportunities provided by the online environment in the English programme of the Syrian Virtual University?

Although the discussion forum was not used when this study took place, some faculty talked about the opportunities that such a tool offered when it was used by teachers in previous online courses. These opportunities were related to creating involvement, intimacy, and development of a social emotional bond necessary for social presence among students. When some teachers used this tool to initiate and encourage written interaction and discussion among students, it required a change in their role. The new role in these virtual venues was to initiate, encourage, and moderate the discussion, and to facilitate communication among students. This represented a transformation of the teacher’s role from that of transmitter of knowledge, from "source of information," and from "expert" (Tam, 2000: 52) to a "guide" (Tam, 2000: 52), "mentor," "tutor," and "facilitator" of student learning.

This new approach served constructivist pedagogical purposes. The new role is consistent with Warschauer's (1997a) argument that computer-mediated communication supports a constructivist approach in learning by allowing students to interact and construct knowledge together, and by breaking the pattern of teacher-centred interaction (Warschauer, 1997a). The discussion forum was used as a tool not only for initiating discussion between students in writing, but to provide students with administrative support. The fact that discussion forums were used to create emotional bonds with students was important. Feeling a sense of community is essential for promoting interaction among distance learners (Argyle and Dean, 1965; Kim, 2000; Leh, 2001; Walther and Tidwell, 1995; MacKinnon, 2013a; 2015). "People feel intimate and share more if they feel socially present. However, when social presence is lacking, people recognize the environment as impersonal and share less" (Leh, 2001: 10). Thus, creating emotional involvement can make the discussion forum of special value for meeting student needs it enables teachers to provide extra support and increase the social emotional involvement of students.

Social interaction through the discussion forum had many advantages such as stimulating critical thinking as it required students to defend their views, negotiate meaning based on others' contributions, develop their thoughts and thinking (Hawkey, 2003), and strengthen the feeling of belonging and sense of community (Felix, 2003c). In addition, forums served the integration of reading and writing skills as participants had to first read about the topic before they could write what they thought about the topic. They also had to read other student's contributions before they could comment on them and then write their own contributions. The integration of these different skills is an essential principle in communicative language teaching (Freeman, 2000).

. Individual study through web-based learning requires students to have certain learning skills and abilities as well as self-motivation (Carr, 2000; Galusha, 1997; Hurd, 2005; Little, 2002; Tam, 2000).+ Automated learning provided many benefits for language learning as observed during the course of the present study. Audio conferencing presented an opportunity for faculty to assist students and show them how to use the available materials independently. Faculty need to support students, which is particularly essential for those who have poor study survival skills or may lack skills and can be at risk of dropping out. This support is equally essential for students who have skills, but do not have time to spend outside the actual class time. Findings in the present study showed many students found it more convenient to study the materials with the teacher than on their own, which, according to faculty in this study, many students in the English course did not have. From the student point of view, however, individual study required time and effort, whereas working with the teacher in the audio-graphic conferencing sessions (on learning structural knowledge of the language and developing accuracy) saved them a lot of time and effort and was seen as less challenging in terms of learning abilities and skills than individual study. The fact that many online students studied and worked at the same time explained to some extent why many students found it more convenient to study the materials with the teacher than on their own.

Interviews revealed that many students used the class meeting and teacher feedback as an alternative to self study or computer feedback. Students need to be self motivated and have the skills required for self study. However, students preferred to study the materials with the teacher rather than on their own. Results of the interviews suggested that they do not have time was the primary motivator.

Faculty support was an opportunity on the pedagogic level. Meeting in real

time with teachers assisted students emotionally and prevented them from feeling of isolation and dropping out of the course; teachers supported them through synchronous meetings and through emails, which was appreciated by the students. Audio conferencing provided a high quality medium for providing them with needed support. This is consistent with the findings from a study by (Helm ,2013: 42), a study which investigated one of the telecollaboration projects (Soliya Connect Program), where the author concludes that the use of video conferencing was a key factor in online communication and dialogue since it offered a high level of social presence, immediacy, and intimacy which allowed participants to see each other as human beings and individuals, with emotions and needs'.

Enhanced flexibility was another opportunity. Flexibility of online learning is important especially for students who work and study at the same time and who have family and other life responsibilities that may prevent them from attending traditional classes (Reinders and White, 2010: 62). However, students in this study mentioned that the recordings of the synchronous sessions, which made them available online, enhanced the flexibility of the online course. This is consistent with findings of Slocum and McGill et al. (1994).

Flexibility was also an opportunity mentioned by faculty. Although the online classes took place in real time, faculty noted that when holding real time sessions with audio-graphic conferencing they could take into account that many students had job commitments, and others could not attend at a specific time for different reasons. Faculty, therefore, were flexible as they scheduled some of these sessions at a time that suited their students. This flexibility offered an opportunity as many students mentioned that this time and place flexibility enabled them to study and work at the same time. This agrees with Bluke et al, (2008: 114) who observed that "a completely

virtual course appeals to people who work full time and, therefore, need flexible access to instruction."

In a study by Rosell-Aguilar (2006b), when teachers were asked about what they found enjoyable about teaching with audio-graphic conferencing, they referred to the fact that the medium allowed them to work from home rather than travel. They also mentioned that the most helpful aspect of the software was that it allowed students to attend who otherwise might not have access to an education. One of the participants in the present study commented "it is fun to find ourselves in the comfort of our own homes." Hampel (2003) mentioned that one tutor observed that, because there was no need to travel, the subject lyceum enabled fairly regular attendance and tutorials. In addition the fact that synchronous online meetings can be "captured and replayed anywhere, anytime provides enhanced flexibility for learning" (Slocum and McGill et al., 1994: 24), which was one of the opportunities revealed in the present study. Online classes enable students to attend live sessions or see the recorded sessions in case they cannot attend in real time.

Being unseen while attending from home provided another advantage for participants as it offered a relaxing atmosphere. These findings were consistent with those reported in studies on CMC where one of the main benefits of CMC was that it allowed more equal participation due to the degree of anonymity it offered the participants (Belcher; 1999; Warschauer, 1995; 1996b). With regard to audio-graphic conferencing in particular, similar findings were reported by Hampel and Felix et al, (2005) where student lack of body language in the audio-graphic conferencing environment was perceived by some as an advantage as it allowed them to remain "incognito" and to speak more freely. Felix et al. also reported that the audio-graphic environment allowed for a "highly democratic environment" where both students and

tutors were addressed by their first names. Such a feature was beneficial for language learning. In a study by Rosell-Aguilar (2006b) of the teacher's experiences of audio-graphic conferencing, one of the participants said that students felt more confident and more willing to take risks as they were able to hide in the anonymity of the medium.

Finally, students appreciated the fact that synchronous text-based tools that were integrated into the audio-graphic environment provided more immediacy than emails (Coghlan, 2002; Hines and Pearl, 2004; Johnson, 2006; Walther and Parks, 2002). This relative immediacy offered students many advantages. Instant text, for example, provided students with immediate access to each other where they exchanged ideas, asked each other questions, and solved misunderstandings. Instant text chat also provided students with access to the teacher where students asked questions and received immediate answers. Teachers used this tool to offer students immediate answers and support.

6.6 Research question 4: What are faculty and student perceptions of the constraints of the online environment in the English programme of the Syrian Virtual University?

Although forums served the integration of reading and writing skills during which students read other student's contributions and wrote their own contributions, using this kind of discussion forum was reported to be a challenging task for teachers. Although forums offered an opportunity for discussion and written social interaction, this opportunity did not seem to be exploited by faculty as a device to initiate written discussion among students. Students can, indeed, gain benefits from accessing the materials and working on them on their own, an opportunity; however, the interviews

showed that students needed emotional support, a constraint. They also needed academic support.

Students undertaking distance learning courses and who have poor study survival skills, or even lack these skills, can be at risk of dropping out especially if they did not manage to develop such skills in a short time (Galusha, 1997). The challenge for teachers and course designers, therefore, is to create a learning environment that enables students to be independent learners. It is equally important for teachers to have the necessary skills to "assist students to be independent learners" (Khine and Yeap et al., 2003:122) and to mentor all types of students including those CMC environment favours (e.g. shy, introvert, and not verbally proficient students).

Because distance students are less accessible than classroom students it can be challenging for faculty to help them develop reading and writing skills (Hurd, 2005: 16). Hence the importance of audio conferencing. Studies reported similar findings where it was argued that without the assistance of a teacher, students tended not to access the web-based materials or do individual study (e.g. Reinders, 2006; Reinders and White, 2010).

Another challenge related to the use of audio-graphic conferencing in this study was related to synchronous meetings that took place at a specific time, which reduced the "anytime" flexibility associated with online learning that is implemented only with asynchronous tools such as forums that can be accessed at any time. This created what Hines and Pearl (2004: 34) described as a "synchronous challenge." The use of audio conferencing created some problems for some students regarding flexibility. This problem was solved with recordings of the sessions and by flexibility in scheduling the sessions

Results of the present study showed faculty and student experiences of the medium also showed that it was dynamic because the real time spoken and written interactions offered a certain degree of spontaneity, but not the same degree of spontaneity offered in face-to-face situations. Concomitant with focusing on social interaction (teacher-student interaction and student-student interaction) in the online environment and the use of different modes and modalities for offering personalised feedback and support and for teaching speaking and writing, the research was focused in part on the lack of social cues in audio conferencing and the impact of it on offering personalised feedback and support or for teaching speaking and writing. The absence of webcams in audio conferencing reduces the availability of social cues such as facial expressions and gestures. In Chapter 2.0, social cues theories were discussed and the importance of social cues for social interaction (e.g. through behaviour management, turn-taking and social presence) was highlighted. The effective use of audio conferencing (for teacher-student interaction) from the perspective of this study can be achieved through the use of alternative modes of communication and semiotic resources to mange behaviour and turn-taking to create social presence, which facilitate social interaction and communication and help teacher to support students and to give them personalized feedback. However, when it came to teaching speaking (and student-student interaction), the lack of social cues had both positive and negative consequences. It was constraining for spoken interaction. For example, it created problems with turn-taking. These problems need to be addressed properly if this tool id to be successful when used for developing fluency in speaking. Dealing with this problem in this study added another problem concerning pedagogy and the teaching of speaking and fluency in general. The other problem was related to spontaneity and its impact on teaching speaking

One of the primary challenges regarding teaching and learning in the online environment was related to technical issues. The greatest problem in the use of audio conferencing, especially for oral communication, was related to technical considerations, which affected different modalities such as voice chat and whiteboard. This challenge was cited by both faculty and students and was one of the main observations in this study. Results showed different types of technical difficulties occurred when teaching and learning in the online environment. Technical problems included (a) low sound quality, (b) weak or absent internet connections, (c) problems related to the ISP (Internet Service Provider), (d) voice distortion or total loss of voice, and (e) loss of materials. Overall, the findings regarding technical problems were consistent with the experiences of the use of audio-graphic conferencing reported in previous studies (Hampel and Hauck, 2004; Rosell-Aguilar, 2006b; Wang and Chen 2007).

In Rosell-Aguilar's (2006b) study of faculty experiences of audio-graphic conferencing with Lyceum, most tutors (89%) experienced some sort of technical problem. Faculty main concerns were related to the ISP (Internet Service Provider) and internet connection as well as difficulties related to sound quality. In a study by Wang and Chen (2007), different types of technical problems were encountered by the participants in the study. Participants who used dial-up connections had problems with sound quality as the sound was unstable at times and packets of data were lost. Hampel (2003) reported that technical difficulties were a main issue with both students and faculty when the same software was used. In the same study, two thirds of students and faculty stated that technical problems had a negative impact on their teaching and learning experiences. Finding in the present study were consistent with those from many other studies where one of the main articulated concerns was related

to technical issues (Carr, 2000; Erge, 1998; Garrett, 1991; Harris, 1997; Maguire, 2005; Singhal, 1997; Song and Singleton et al., 2004; Tiene, 2000).

Another challenge was related to time commitment. In spite of the advantages that the discussion forum can offer for online students this virtual space was not used in the online course when this study took place. The use of the discussion forum was hindered by the fact that this venue required much time and effort from the teacher. The use of the forum, for example, required technical work on the part of the teacher to set it up. It also required preparation of the topics, initiation of the discussion among students, and much effort to follow up and encourage these discussions. Teachers who used the forum in previous courses felt that these tasks were very demanding and time consuming.

Findings from this study regarding this issue were in agreement with the use of the discussion forum requiring labour-intensive approaches (Felix, 2003b; 2005a). Findings were also consistent with many studies on telecollaboration which identified a need for increased support for educators who may be potentially interested in taking up this activity (Guth and Helm et al , 2014:12). With regard to the COIL project, for example, the effort this telecollaborative activities required ,as well as lack of support and recognition, were cited as the main reasons why partners might not carry out further interactions of the COIL project (Guth, 2013). This approach requires a significant time commitment (Berge, 2002; Galusha, 1997) and can be overwhelming for faculty (Rambe 2012; Wallace, 2003). To encourage teachers to use this tool, it is important to provide them with technical support and to free some of their time for preparation and organization of the forum. In addition, faculty, especially those who never used the forum before, may need training to familiarize themselves with this tool and how this technology can be exploited to support online English language

learning. Teachers have also been advised to use their time wisely (Wallace, 2003). Berge (2002: 184) asserted that "additional faculty compensation" and "incentives and release time" became important factors to address. Faculty need to receive adequate support from the institution to exploit the potential of the online environment for constructive activities. Guth, Helm, and O'Dowd (2014:7) discuss the long-term sustainability of telecollaboration and argue that 'a technical and administrative infrastructure that supports educators in their collaborative activitity woud lead to greater continuity of OIEs over time as well as encourage teachers who have not previously engaged in OIE projects to take their first step' In addition, teamwork can be helpful with this issue (Torut, 2000).

Another challenge was related to self motivation. An important issue raised in the results of this study was related to the characteristic of students in the online course. Findings showed that students may misuse the materials. They may get the correct answer from materials outside the course or someone standing by, and then give it to teacher.

The online materials included writing activities where students were asked to join the discussion forum. Asynchronous interaction took place through emails, which were used by some teachers to encourage written communication between students in the target language. Students were required to work in twos or in small groups on a collaborative project, which was an assessed piece of written work, and to use emails in their communication with each other when they worked on this project. However, the use of emails was challenging because of the teacher's inability to monitor students' written communication, which was seen by some teachers as a disadvantage as students were likely to use their native language during their communication. That meant that students did not exploit the task for practising their

communicative skills in the target language. In some cases, students were asked to send copies of their communications in the target language through emails to teachers to control this behaviour. This problem can be solved through the implementation of collaborative tasks and project work (telecollaboration) where partner classes (or learners) of different native languages and cultural backgrounds can be brought together online with the aim of developing their foreign language skills and intercultural competence. Examples of such projects include the Soliya Connect Program where participants of lingua cultural backgrounds and from different geographic regions (USA, Middle East, Europe and North Africa) were brought together to communicate and collaborate through the use of online communication (Helm, 2013). Another example is the Clavier collaborative project (Mackinnon, 2013b) which brought together English speaking learners of French from Warwick University and French speaking learners of English from the Université Blaise Pascal Clermont Ferrand.

Students needed to be self motivated to succeed in their study as faculty could not reach them as normally done with students in face-to-face learning. They needed to be motivated to learn the language rather than have a short-term goal, which was to pass the exam or fulfil a requirement of the assessment. This agreed with the observation made by many authors who highlighted the issue of students being self motivated to succeed in their studies in the online environment (Carr, 2000; Little, 2002; Tam, 2000) and should have the skills of "self-management" and "self-regulation" (Hurd, 2005: 16). "The success of this type of learning clearly depends on all participants' awareness of the potential uses and abuses of the special affordances available to everyone" (Hampel and Felix et al., 2005: 20).

Another challenge was lack of study skills. It has been argued that online student characteristics play an important role in the success of online learning (Galusha, 1997; Reinders, 2006). For the online environment to support English language teaching and learning, students should exercise control and assume responsibility for their learning, which means that students need to develop the skills required for self study. Students should be offered training to develop such skills (Rosell-Aguilar, 2006a). Rosell-Aguilar (2006a) noted the need for initial support and training. In this study, teachers show students how to use the materials and how to access the materials in Telecentres. These needs should be emphasised when planning online courses as failing to meet them can lead to frustration (Galusha, 1997). This is also important because online learning self-selects for students who have these essential characteristics (Galusha, 1997; Reinders, 2006).

Other challenges included the lack of social cues, social presence, and emotional bonds, and turn-taking. Faculty did not receive any visual cues that conveyed any information about students' situation, which led to difficulty in forming impressions about the level of students' understanding or engagement in the lesson. In addition, some participants in this study suggested that individual differences could not be identified through the use of audio-graphic conferencing, which led to depersonalization in online communication.

Similar experiences with the lack of body language were reported by Hampel and Felix et al., (2005) where one of the students observed that lack of body language made it difficult for participants to tell if other participants had understood one's contribution. The same student suggested adding a "something wrong" button that participants could click when they could not hear the voice. In this regard (Liu, 2002: 106) concluded:

> People perceive the social order through both static and dynamic social context cues. Static cues come from people's appearance. Dynamic cues come from people's behaviour, such as frowning with unhappiness and nodding approval […]. From this perspective, nonverbal cues […] supply valuable information about the communicators. This kind of information is very helpful in forming impressions, assessing the ways the participants understand and reply to messages, and determining the truthfulness of the participants' communication.

Faculty reported that, due to these factors, engaging students in the lesson was a challenging task. Faculty in the present study tried to play an essential role in decreasing the negative consequences of body language in the audio-graphic conferencing environment. They tried, for example, to engage students in the lesson by prompting them and pushing them to participate or by nominating them randomly to keep them alert. They asked them questions to test their understanding.

While body language and non-verbal communication help teachers in traditional settings to create emotional bonds with students, the absence of this aspect from online communication put more burdens on faculty who were required to make more effort than in traditional settings to create emotional bonds and engage students in lessons. Some researchers have argued that lack of social cues from online communication can lead to difficulties in forming social-emotional bonds among students, as well as affect the nature of interpersonal interaction via the medium (Kim, 2000; Walther and Tidwell, 1995; Tu, 2002). MacKinnon (2013b) refers to the importance of affective factors and their significance to learning. 'If we are to ensure positive experiences for learners then becoming more reflective as a practitioner is to be desired' (MacKinnon, 2013b:11). Success is likely to be dependent upon mastery of the skills required by the technology.

Results from the present study showed that forming such bonds can be challenging for the teacher, but it is not impossible. In this study, emoticons were

sometimes used to indicate an emotion. One teacher reported emoticons helped her convey her feeling to students. If she is pleased with an answer, she would use the emoticon☺; if she was unhappy with an answer, she would use another emoticon to express her mood. This agrees with some researchers who emphasize that teachers play an essential role in facilitating online communication and that the social quality of audio conferencing depends not only upon the medium itself, but also upon the style of tutoring in the audio-graphic environment (Leh, 1999, 2000; Gunawardena, 1995). Faculty can use different strategies to decrease or overcome the negative effect and consequences of lack of body language by using emoticons, humour, feedback, text chat, or other devices. Rosell-Aguilar (2006: 7) declared:

> The more experience and expertise with the audio-graphic software the tutors gain-even taking into consideration the decrease in novelty of the medium and the effect that may have on the tutors' attitude and perceptions of using it as a challenge and something exciting - the more the tutors will learn to know what to expect from the tool, its benefits and its limitations, and therefore use it in a manner which suits their needs and most importantly those of their students.

This approach acknowledges the active role of participants in online interactions and their capability for creating social relationships and personal impressions in a reduced cues environment (Ramirez and Walther et al., 2002). Similar views were echoed in research studies conducted by Powers and Mitchell (1997), Leh (1999), Adams (2006), and Rosell-Aguilar (2006). In contrast, Wang and Woo (2007: 273) argued that "Although a number of emoticons [such as ☺ ;)] can be used to enhance body language, they are not equivalent to lifelike human gestures and are therefore insufficient to truly emulate human expressions."

Another challenge noted in the results of the present study related to reduced teaching time. Because of turn-taking issues and technical issues, teaching time in online learning is reduced. This leaves little or no time for teaching speaking.

Teachers need to teach a specific number of the materials, which leaves little or no time for teaching speaking. In addition, teaching speaking itself is time consuming.

Because faculty used audio-graphic conferencing to give students personalised feedback and support, it was at the expense of using this tool for developing student's oral fluency. Thus, the full potential of audio-graphic conferencing can be exploited for speaking practice only when non-communicative activities that "constitute the sort of drudgery that teachers have long been tempted to transfer from humans to machines [with the desire to] generate significant savings of time" (Felix 2005b: 150). This will happen only when the level of sophistication of feedback and support offered to students through computerized interaction is improved (Felix, 1999). The drill-and-practice format, or the behaviouristic paradigm, was inadequate in terms of providing students with contextualized and personalized feedback and support.

To enable faculty to focus their time and effort on designing speaking activities and on creating situations that help students use the target language to improve their fluency, the use of labour-saving approaches need to be developed (Felix, 2005b) where automated computerized activities are "more humanized and pedagogically sound than the traditional drill-and-practice paradigm. Humanizing automated feedback can be achieved through the use of different types of hints (e.g. structural, personal etc), and through the use of graphics (structural, personalised etc), and games (Felix, 2005a). This approach also needs to include providing students with support by explaining to students why their answers are wrong, assessing students' language skills and use of remedial exercises, dealing with misconceptions and errors, encouraging active engagement. Modes like sound, movement text, and other forms of feedback such as scaffolding and coaching present an advantage to what can be done in traditional learning settings (Reinders and White, 2010).

The use of text chat to develop student fluency in the target language was faced with pedagogic concerns. It is generally agreed that the main aim in learning and teaching a foreign language is to have the ability to communicate in it, and that students in the language class should have opportunities for interaction where they use the language for communication in fluency focused activities, and where the teacher provides them with feedback that does not focus on accuracy and correction of mistakes (Hendrickson, 1978; Rolin-Ianziti, 2010). During the online sessions, there seemed to be a conflict between the objectives of fluency activities and a focus on error correction during these activities. In some activities (specifically teacher-led discussion), teachers tried to create communication situations in which the learner could perform with focus on meaning. However, during this activity teachers provided students with feedback that focused on accuracy and direct correction of students' grammatical and spelling mistakes. In parallel with this argument Walsh (2002: 5) maintained that:

> Where language use and pedagogic purpose coincide, learning opportunities are facilitated; conversely, where there is a significant deviation between language use and teaching goal at a given moment in a lesson, opportunities for learning and acquisition are, I would suggest, missed.

In fact, the nature of teacher feedback provided learners an indication as to what aspect of the language they needed to focus on in a certain activity in the present study. Teacher feedback, therefore, should support the pedagogical purpose of the activity. In this regard, Littlewood (1981: 89) described the goal of foreign language teaching as "to extend the range of communication situations in which the learner can perform with focus on meaning without being hindered by the attention he must pay to linguistic form." In addition, the teacher's role is crucial in fostering a learning

environment where learners feel a sense of security, which encourages them to use the target language communicatively in the classroom.

Email use was generally asynchronous and the delay in response during communication between teacher and student was viewed as a constraint and caused inconvenience to some students who preferred getting immediate responses to their questions. Students suggested that meeting each other face-to-face or meeting with the teacher after the session would reduce this problem. This finding is echoed in the literature where both Curtis et al.(2001) and Dorociak (2000) note students preferences for more immediate responses and in Shi and Bonk et al. (2008) and Haefner (2000) who found that CMC offered less immediacy and timely interaction than face-to-face situations. Haefner (2000: 15) suggested that the importance of being 'earnest' and the consequences of this issue on motivation are supposedly well known by teachers especially those who are 'trying to energize and motivate students'. As the asynchronous nature of some online tools such as email and discussion forums do not require 'immediate spontaneity', participants in asynchronous online discussions 'might lose their enthusiasm, procrastinate, and then be unable to follow the discussion thread' (Khine and Yeap, et al., 2003:121).

Difficulties were also experienced in respect to turn-taking, especially when interaction took place between more than two people in the session. This happened because no visual signals were available to help students regulate their real time interactions. In Chapter 2 turn-taking was seen as affecting the effectiveness of a CMC communication. Hampel (2003) described similar difficulties in synchronous oral conversation despite the introduction of a button that could be used for 'raising hands'. In the present study, the audio chat feature was not enabled for all students

simultaneously. Only the student who was chosen by the teacher could speak. In this way, the interaction the teacher was able to manage turn-taking, which tended to help teacher-student interaction, in particular giving an opportunity for the teacher to control interaction with students and to give students personalised feedback and support. However such teacher control presented difficulties when it came to student-student interaction and to teaching speaking. Consequently, students were not given the same level of control as teachers over the audio-graphic environment and some constraints were imposed on student-student synchronous interaction.

On a pedagogical level, the fact that the teacher centrally managed turn-taking suggested that students were expected to work in "lock-step" with the teacher. In addition, the observation of audio-graphic conferencing showed that the (spoken interaction in the online sessions was mainly between teacher and students rather than between students among themselves. This pedagogic aspect of using audio-graphic conferencing in language teaching were discussed in the literature by many authors who expressed their concerns about teachers developing "transmission" and "control" features which mirrored face-to-face teaching practice when using audio-graphic conferencing. More specifically, authors expressed their concern that these audio-graphic conferencing systems "give the academics a presentational device [which] they could all too easily make use of […] for delivering new material, rather than allowing a student-led discussion to develop" (Laurillard, 2002: 155). Some authors warned that when adopting audio-conferencing applications and other computer-mediated communication technologies such as instant messages tools, e-mails, and chat rooms in language teaching and learning "it is not sufficient to see the new learning spaces as replicates of conventional face-to-face settings" (Hampel and

Hauck, 2006: 3; see also Lewis and Chanier, 2011; Hampel and Stickler, 2012). In the same vein, Anderson (2008: 69) argued that:

> Emerging best practices now recognize the flow of communication in online courses to be much less "teacher-centric" than in traditional classroom discourse; teachers do not have to respond immediately to every student question and comment, and playing a less dominant role in class discourse can actually support the emergence of greater learner commitment and participation.

When faculty centrally manage turn-taking an opportunity for personalised feedback and support disappears. It is a constraint for teaching speaking. It is important for students to learn how to take turns and manage online discussions (e.g. multitask) without the need for social cues.

Another constraint was related to lack of spontaneity and immediacy in oral communication, specifically, the slowness or reduced spontaneity in synchronous verbal communication. T his aspect of online interaction is similar to what was described by Rosell-Aguilar's (2006b) where the interaction patterns were described by some participants as slow. Because audio chat feature was not enabled for all the students simultaneously, students were not able to speak immediately after they raised their hands (or after they pressed a button which indicated that they would like to speak), which resulted in a decrease in spontaneity of oral interaction. Other factors that led to delay in communication between initiation and response included technical issues and the nature of the medium itself, i.e. the audio conferencing program that was used in the course. The delay may be small but enough for students to lose the energy and the excitement described by Coghlan, (2002: 2), who argued that "immediate interchanges have an energy and earnestness that can't be matched by deferred responses, delayed replies." The delay in response was inconvenient for students and presented a constraint for oral communication in the present study. This delay in response and a lack of spontaneity in real time oral interaction was echoed in

the literature where it was suggested that "Synchronous online sessions cannot equal the subtlety, the humour, the energy, and the excitement of the real life (RL, as it is known in cyber circles) classroom" Coghlan, M. (2002: 2). This is a constraint for teaching speaking as lack of spontaneity affects spontaneous oral communication through audio conferencing.

6.7 Conclusions and reflections

The primary research question that guided the investigation was if the online environment could support English language teaching and learning in the Syrian Online University. The online environment did provide students with the opportunity of experiencing multiple approaches: self study where students worked alone on the interactive materials and received computer feedback, and learning through audio conferencing where they worked with each other and with the teacher to receive human feedback. These two approaches met different language learning needs, i.e., students needs for independent learning, and their needs for social learning. It also met the needs of students who were less capable of working independently, especially those who did not have the necessary proficiency in English for working alone. These students had the opportunity to have support from the teacher and from other students.

The use of multimodality offered many opportunities for language teaching and learning, but at the same time, there were many constraints that need to be addressed in further research. Social interaction took place through many modes (audio, graphic, chat), which were integrated into the audio-graphic conferencing technology. The use of text based tools was reported to improve students fluency in writing. The main tool used for this purpose was text chat. However, emails, and in one case, the discussion forum, was also used in complement to text chat. If educational technology is to be used to enhance learning, then the use multimodality

for social interaction needs to take place and to create a social presence that facilitates interaction.

Although many constraints were associated with the use of audio conferencing in language learning, it did provide many opportunities when appropriate teaching strategies were used. The perceptions in this study regarding lack of social cues were complex as was reported to have both advantages and disadvantages at the same time. Faculty and student experiences showed that they were generally positive about using the online environment for teaching English. Students believed they became more independent. This type of learning gave them the opportunity to work alone on the interactive materials and get feedback repeatedly. The teacher gave additional dimension to this approach by providing useful explanations and by encouraging students to use the interactive materials to the best of their potential. Audio-graphic conferencing also provided students with a social environment where they interacted with the teacher and sometimes with each other. This reduced the feeling of isolation that is often associated with distance learning.

Although teachers and students were generally positive about using the online environment for English language teaching, there were certain issues that could be improved such as training both students and teachers about technical support and the appropriate infrastructure. However, the impact of these issues were not particularly detrimental as teachers often were clever and innovative and found ways to reduce the impact of these issues on students' learning experience.

This shows the importance of a good teacher who can make learning successful. A good teacher makes a good session provided that crucial requirements are available like a secure and dependable internet connection. In considering the impact of these issues on language learning, results showed that teachers often

implemented changes to address problems they experienced. This resulted in a set of practices that worked in providing successful and effective video conference in this context.

With regard to teaching students how to communicate in English, one strategy that was used by teachers in the virtual environment was the use of text chat to improve students' fluency in English. Some teachers believed that this strategy could also improve students verbal fluency, which is particularly interesting and might be an avenue for further research. On some occasions, teachers asked students to use the microphone, but there were often interruptions in the voice due to slow internet connections, a plague that must be resolved in the future.

Findings from this study showed that students appreciated an approach that focused on form, accuracy, and correction of mistakes. Thus, automated feedback and interaction should be integrated into online learning because of the many opportunities that it offers to students that can be difficult or even impossible to be offered by teacher (e.g. continuous feedback). In brief, a combination of automated interaction and social interaction presents a huge opportunity in language learning as this combination provides a balance between two essential needs for language acquisition fluency and accuracy. The findings from this study showed that most students appreciated an approach that catered for linguistic accuracy and correction of mistakes. They appreciated also what automation had to offer in that respect.

Findings also showed that teachers used audio-graphic conferencing for giving students personalised feedback and support. The automated materials were enriched by feedback from teachers who used the audio conferencing technology for this purpose, i.e., for providing students with personalised feedback which cannot be provided till now through automation and interaction with computers. Through this

practice, teachers played a role that achieved a different pedagogic and learning objective from that which can be achieved by computers. Adding the audio graphic component to the online English language course was a responsible procedure with benefits for providing a great deal of guidance, support, and improved quality of feedback.

Audio conferencing is actually doing a good work at the Syrian Online University by giving students personalised feedback. However, call programs should be developed in a way that enables programs to offer such feedback so that teachers can free their time for initiation activities that encourage social interaction among students. Synchronous meeting through audio conferencing offer enhanced immediacy especially text chat, although not the same level of immediacy as in face-to-face interactions.

6.8 Methodological considerations

A detailed list of assumptions and limitations of the study will be found in Chapter 1.0. In addition, the study was limited to profiling the opportunities and constraints of a specific online environment and to investigating the nature of this environment in relation to the theory and research presented in Chapter 2.0. The study was not intended to focus specifically on one area of online learning such as social presence or the exploitation of multimodal tools, nor on only one aspect of language learning such as speaking or grammar. This broad scope was necessary since the use of technologies such as audio-graphic conferencing for language teaching and learning is a relatively new practice with little research. This allowed a general overview of the strengths and weaknesses of the different technologies that are integrated into the online environment and into teaching practices.

A limitation of this study was that the investigation of some parts of the online environment such as emails and private text chat depended only on self reported data through interviews with participants and completed questionnaires. The audio-graphic environment provided private text feature that students can use to communicate with each other in the online sessions. In the interviews, students mentioned that they used private communication to socialize with each other and to ask each other questions about the lesson. During the observation, however, these interactions that took place in this way were not observable. The same can be said about the communication that took place through emails between the students as these emails were not available as a source of data collection.

The questionnaire that was used in the study, due to many practical and institutional constraints, was not distributed to a large number of students in the course. Hence, the questionnaires and the interviews both were based on data availability and a concern for drawing a representative sample. The aim was not to draw a statistically significant sample, but to keep the boundaries of the case as understood in qualitative research. Despite the fact that perceptions expressed about the online environment cannot be said to represent the views of all the students in the course, using teacher interviews and observations allowed the researcher to draw a general view of the teaching and learning in the online environment. Qualitative studies are more concerned with the richness of the information rather than on sample size or the representativeness of the sample. These issues permit for statistical and analytic generalisations and this study look for naturalistic generalisation.

6.9 Recommendations for educational practice

This study has implications for the use of audio-graphic conferencing in language teaching and learning in addition to web-based learning and asynchronous

CMC. Recommendations for educational practice were made in relation to these three formats of online delivery. These recommendations include the following:

1. It is recommended that using audio conferencing be used for providing personalised feedback until designers, with the help of educators, can develop software that is able to free teachers for speaking activities.

2. Students in this study demanded more opportunities for practising oral communication skills. Some students suggested organizing extra sessions only for speaking where students can practice using the target language in synchronous, spoken interaction. This, however, may work in practice only if organizing such sessions benefits from the experiences of using audio-graphic conferencing for speaking reported in published research. Reducing the class size in speaking sessions may help sessions to be successfully conducted by the teacher.

3. Some findings show that the capacity of the audio-graphic conferencing program was still insufficient in terms of supporting spontaneous and immediate interactions. This limitation resulted partly from the fact that participants needed to wait after they raised their hands before they could speak. Such a feature did not seem to facilitate interaction because it decreased the spontaneity in real time interactions and the immediacy of response and of turn-taking. To facilitate interaction, the capability of the audio-graphic program needs to be enhanced. Specifically, the software needs to be adapted in a way that allows participants to speak immediately after they raise their hands which would give all participants equal rights. However, giving all participants equal rights requires certain skills in managing self-turn-taking in the absence of social cues. Having such a skill is essential especially when the interaction takes place between more than two students. These skills are needed if teaching is to run smoothly, but they are especially

important when participants choose to (or have to) use audio, rather than video, conferencing.

4. One of the issues raised in this study was that the software did not allow for oral conversation to take place between twos or between students in small groups, and therefore on the time that students can be given to practice speaking skills. The software used in this study was more suitable for whole group teaching. Software can be enhanced in a way that allows for sub-chat rooms to be created. This would allow for verbal conversation to take place between more than two individuals at a time, allowing for conversation between twos (each two students), which can have a positive effect on the actual time students can spend on practising their speaking skills in the target language. In practice of course the past four years has seen rapid developments in technology. For example it has become standard to provide online 'break out' rooms where students can be placed into groups with the aim of addressing particular issues in a peer supported environment. Therefore, it has to be acknowledged that suggestion 4 was largely addressed by the time this thesis was completed.

5. Some of the constraints were related to the nature of the online materials. These materials were of a behaviouristic nature and did not include any speaking activities. The findings showed that the materials were based on computerized interaction and focused on structural knowledge of the language and on accuracy rather than on verbal fluency. Teachers should be provided with communicative materials that include both structured and unstructured speaking activities. These materials can focus on the same topic of the unit of the existing materials (which focused on structural knowledge of the language and on accuracy) so that students can use the language items they learn in each unit in oral communication. Teachers can

initially use the communicative materials as they are. As they build their confidence as audio-graphic conferencing users and materials designers, teachers can adapt these materials according to their teaching style, their students' needs, and the nature of the teaching context. When adapting materials, teachers need to be mindful of the applicability of these materials to the audio-graphic environment and need to learn from the success (or lack of) of previous attempts.

6. The findings from this study suggested that one of the main challenges of using audio-graphic conferencing for teaching was related to the poor internet connection, which led to a number of technical problems with using the software. The use of two-way voice chat was faced with many technical difficulties as this method of communication can slow the voice as well as the transmission of graphic information. The online institution needs to implement a program (software) that allows students with low bandwidth connection to access and attend the sessions without having to face problems with sound quality.

7. The findings show that lack of social cues during the online sessions has both advantages and disadvantages. This suggests that there are pros and cons in the use of both audio and video conferencing. Using the video feature can add a variety of visual cues to the online interaction, though for some participants adding a video feature to the audio conferencing environment would they felt have the potential of making them feel less relaxed during the online sessions. The lack of non-verbal cues encouraged some shy students to participate in the session and provided a degree of equality for students. However, to enjoy the benefits of audio communication both teachers and students need to develop new skills and function well in the absence of visual cues. In addition, teachers need to communicate to their students what to

expect from the online environment. Teachers should communicate to students that online environments are not the same as on campus teaching and learning.

8. Some students wanted opportunities for face-to-face social interaction with each other and with the teacher. The centres provided by the university can be used to give students the chance to meet each other in person for socialization and support. Students from the same geographical location should be introduced to each other beforehand (probably in the online sessions) and encouraged to meet each other in these centres, especially that many students attend the sessions from these centres to benefit from the fast connection.

6.10 Recommendations for educational research

As the use of audio-graphic conferencing in online learning is a relatively new practice, there is much left to research in this field. This section includes suggestions for interaction and oral competence. It also includes suggestions for further research on the use of this technology in conjunction with asynchronous CMC, namely, the discussion forum.

1. Some findings in this study suggested that having a dialogue between more than two people without non-verbal social cues makes it difficult for students to regulate turn-taking. Since there is no specific research on this topic yet, more research is needed to tackle the issue of interactions between students during online meetings that take place in real time (or the audio-graphic conferencing sessions), and how they may suffer from turn-taking problems. Research on turn-taking in the audio-graphic conferencing environment can help tackle challenges which are related to this issue and to overcome these challenges so that audio-graphic conferencing can be implemented more successfully to support language teaching and learning. It is useful when doing research about turn-taking to look at other environments such as

face-to-face settings and environments that implement asynchronous written communication.

2. Some teachers in this study used text chat as a substitute of audio chat in order to communicate with students and to initiate teacher-led discussions. This practice, however, does not seem to be based on findings from research. Does instant written interaction have the same potential for developing oral fluency and competence as oral interaction? Research in this area is important for teaching contexts where text chat is used instead of voice chat (or where instant written interaction is used to complement audio CMC) to support oral fluency in the target language. This recommendation is consistent with Salaberry's (2001:50) argument that "… *the most* important challenge posed by technology assisted language learning will be the identification of the pedagogical objective that technology based teaching is intended to fulfil". Structuring online environments need to be based on sound pedagogical rationale (Miller and Miller, 2000:160), learn from past research, and take into consideration the potential advantages and challenges of the technology used.

3. Some findings suggest that online oral communication through audio-graphic conferencing is a reduced form of face-to-face communication in traditional classrooms. This was related in part to the inadequate infrastructure. However, with the presence of fast connection, do students interact more in a face-to-face setting than in an audio-graphic conferencing setting? Do they have more opportunities to practice their oral communication skills? Research in this area (e.g. comparative case study) may improve our understanding of the effectiveness of the audio-graphic conferencing environment and of the traditional classroom in teaching speaking skills.

4. The discussion forum was not used in the course when this study took place but this feature was used in previous courses. The findings suggested that the

discussion forum is important in language learning especially for creating social emotional bonds between students and for providing students with different types of support. Some findings indicated that audio-graphic conferencing provide access, that it offered students the opportunities to meet with each other in real time and receive support from each other and from the teacher. Future research may explore the potential of this tool when it is used in conjunction with audio-graphic conferencing. Specifically, does the use of the discussion forum improve the social presence in the online environment and reduce the isolation of being a distance learner?

6.11 Wider Recommendations

As mentioned earlier (in chapter one), the contribution of this study is to argue against a technologically determinist view of technology but to offer a more balanced or "objective" view of the contribution of technology to language teaching and learning. The study shows that the integration (or implementation) of technology in language teaching is faced with two main challenges: resistance to some tools and applications and limited success in introducing new pedagogies for those tools that have been taken up. Teachers and students in this study felt that technology use was a very important part of language teaching and learning, but technology integration, in many aspects, not well-structured and did not happen except at the basic level that technology was used. The findings emphasize the important role of contextual factors in successful integration of technology in language teaching and learning i.e. it is the context that shapes technology acceptance and how technology is used.

More specifically, the findings in this study point to a positive attitude in participants' perception of ICT in English language teaching, but also revealed many concerns of the use of technology in language learning. In this study, teachers and learners saw advantages mainly in terms of integration of audio graphic conferencing for whole

class teaching; for providing students with teacher feedback; and for providing students with academic, emotional, and administrative support. However the study also revealed many types of difficulties including students' resistance to self study with web based learning as a stand-alone approach (i.e. studying independent of a teacher); teacher resistance to the use of discussion forum; and difficulties related to the integration of video conferencing for student-student interaction and for communicative language learning purposes. These findings suggest that the integration of technology in this context supports traditional rather than new practices. In chapter one traditional practices were defined as those practices which were based on transmission views of language education, an extreme version of which saw individuals as empty vessels and teachers as transmitters. In this study, these practices included, for example, the use of audio conferencing for whole class teaching. These practices are traditional because they depend on knowledge transmission and reproduction rather than on knowledge construction (Murphy, 2000: 27). In contrast the discussion forum (a tool that encourage collaboration and knowledge construction) was not used for discussion (due to time constraints), and audio conferencing was not used for communicative activities (due to constraints related to interactivity). The findings also suggest that there was resistance to web based learning as a stand-alone approach because it did not meet students' needs in relation to the issue of feedback. Findings from this study suggest that we need to develop particular system approaches for technology integration, that take into account three specific components in any particular context: content, pedagogy, and technology (Koehler and Mishra, 2009).. The findings and recommendations from this study should be of value to those seeking to implement computer technology in

their own language teaching contexts. Some recommendations related to software designers, course designers, and teacher educators are discussed below.

As mentioned above, one of the main challenges (the first challenge) is resistance by teachers and students to some tools and application (or learning system) which are integrated in language learning programmes. Specifically, this study shows acceptance of the idea of using web based learning for form focused practice in conjunction with audio graphic conferencing (i.e. in combination with social learning with teacher), but resistance of web based learning for individual study (i.e. as a stand-alone approach where student can study independent of a teacher). Students who used the system did so in order to prepare for the next lesson and to be able to practice with the teacher in the online session. Various reasons for student resistance are suggested. The main challenge suggested by students was related to the type of feedback. Drill and practice software gives immediate feedback which has many benefits and opportunities related to practice of form at student's own pace, but students felt that the current software did not serve their need for humanized or personalized feedback. These findings can be understood in the light of Davis' Technology Acceptance Model.Davis in his Technology Acceptance Model (1989) expresses that learners' internal perceptions about a technology program will determine his or her intention to use the program or not. This study recommends that web based learning system should accommodate different learning styles and needs. In addition, different types of feedback should be considered. Some of the guidelines which should be considered when creating a pedagogically sound web based learning system; especially with respect to the issue of feedback include tailoring of future work to identified needs, analysis of weaknesses, providing feedback that includes

hints, graphics, games etc. Creating such system entails adopting a multidisciplinary approach that involve not only technologists and linguists but also end users. The creation of web based learning software that satisfies students' needs in individual study can improve pedagogical practice of web based learning. This, in turn, can serve teachers (reduce teachers workload) and free up teachers' time in language teaching programs for activities that depend on social interaction (e.g. speaking activities through video and audio conferencing technology, and written communication and interaction in the target language using tools such as the discussion forum).This study showed a resistance on the part of the teachers to the use tools such as the discussion forum because teachers are already overloaded by teaching responsibilities, and tasks which are carried out through this tool are time consuming (e.g. teachers need to prepare the tasks, follow them up, moderate discussion) and do not fit into teachers' busy schedule.

Other reasons suggested for students' resistance of web based learning are work and family constraints, lack of skills required for self-study, isolation from the learning community etc. Course designers should take these challenges into account when designing a web based course. The study supports the view that when using technology in language learning it is important to support students and, whenever possible, develop skills in autonomous learning, give advice about time management, and train students to equip them with relevant abilities and competencies. Synchronous and asynchronous tools should be an integral part of any web based course as lack of support can lead to students frustration and dissatisfaction. In this study, audio graphic conferencing and emails were used to provide synchronous and asynchronous support, this support did not include training, but included building a

sense of belonging, giving advice about the problems students may encounter, and drawing students' motivation.

The second challenge which faced the integration of technology into the research context was limited success in using video graphic conferencing for introducing new pedagogies for the use of technology for teaching and learning. This study showed a return to established practice (form focused teaching) when using audio graphic conferencing technology. This was for two reasons: firstly, web based learning system has limitations related to feedback (i.e. feedback which is based on reinforcement and memorizations rather than understanding).Because of these limitations, the teacher tried to do what technology could not do. Secondly, in addition to these pedagogical limitations, there were contextual barriers when teaching with video and audio conferencing which added complexity and led to constraints on teaching style, resulting in a more teacher -centred than communicative, learner-centred approach. These two challenges will be discussed below and possible ways to deal with limitations will be recommended.

The web based online environment was an interactive language learning system designed to facilitate the provision of the materials. However, both teachers and students believed that there was a need for delivering the materials (by the teacher) through audio graphic conferencing because the feedback which was offered by the computer was not satisfactory (i.e. a corrective feedback which is based on reinforcement). Hence, teachers and students felt that audio graphic conferencing technology should be used for providing what the software could not do, i.e. humanized, personalized feedback. Providing students with teacher feedback took

place within a teacher centered practice (i.e. whole class teaching) where interaction took place mainly between teachers and students and where the focus was on form. They took the opportunity of the tool to achieve language learning goals related to practice of form and focus on language structure. Therefore this study concludes that suggestions about integration of technology into language learning should be flexible and should not focus only on "one best way" to integrate tools and applications but on the different pedagogical possibilities and potentials. This view of the learning tools and their potential is consistent with that of Hammond (2010: 12) who discusses the concept of "affordance" and suggests that "affordances are always relative to something and, in the context of ICT, relative to desirable goals or strategies for teaching and learning".

Successful integration of technology was defined in this study as acceptance of the tool and successfully exploiting it for language learning purposes. Hammond's (2010) understanding of the concept of affordance used in connection to technology and learning design where "the focus is on how should we perceive or design a tool so that it supports activities which are seen as desirable or necessary for learning" (Hammond, 2010: 5) may be of interest to work on successful technology integration. For example, in a context where generic tools such as video conferencing technology is used for teacher-centered approach in order to serve certain language learning needs, suggestions for technology integration should include tasks and activities that match theses perceptions, but also provide examples of other approaches that might trigger some reflection and thinking about other teaching possibilities. When web based learning systems reach a certain stage of development it seems advisable to include a communicative approach and interactive, meaning focused teaching and learning. However, it needs to be recognized that neither teachers nor learners may pick up on

these opportunities and technology uses unless they are consistent with the existing pedagogical beliefs of teachers and the perceptions of learners. This is not to encourage falling back into established practice, it is instead a call for incorporating different approaches that satisfy different pedagogical goals depending on the context, teaching goals, and on learning needs, rather than relying on one single approach. A good example of this was a pilot virtual learning environment designed with the aim of offering language teachers opportunities for professional development, both technical and pedagogical. The design of the environment allowed for a wide range of learning scenarios from the minimal to the innovative, and from a teaching based to a learning based approach. Tutors or 'lead learner' were given the opportunity to experiment with a variety of approaches and modes of communication and implement the best ones for their learning design as and when they felt comfortable. This, it was argued, helped designers to embrace change in a rapidly changing technological and pedagogical landscape (MacKinnon, 2013a:181; MacKinnon,2015:64). In addition to Hammond's work cited above, Koehler and Mishra's (2009) framework for teacher knowledge for technology integration (called technology, pedagogy, and content knowledge TPACK) may prove insightful for teachers who aim to successfully integrate technology into their own teaching practice. According to this approach, good teaching takes into account three components in any particular context: content, pedagogy, and technology, as well as the interaction, both theoretically and in practice, between these three bodies of knowledge which produces the types of flexible knowledge needed to successfully integrate technology use into teaching (Koehler and Mishra, 2009).

Teaching with technology requires a creative teacher who is able to develop novel, effective, and whole solutions (Koehler and Mishra, 2008). Koehler and Mishra

(2008) gave an example of a teacher who developed creative solutions to help her 3rd grade students understand maps. She first shows her understanding of typical student knowledge about maps and their experience and conceptual understanding at that age: she understands that representational norms such as 2d representations of space, conventions of maps, and taking perspectives such as “bird’s eye view” are not personal to students. She then tries to make these norms more personal to students by having them start with a map generated by typing in their own address into MapQuest or Google maps, copy the map image into Kidpix, and then annotate the map with symbols that indicate familiar places in their neighbourhood. The technologies which were used in the task such as MapQuest and kidpix are not designed for educational purposes so that the teacher looked beyond most common uses for these technologies, reconfiguring them to map her students' understanding of their experiences in their neighbourhood to the conventional representations offered by maps. These uses were based on her understanding of students and their development. She then created connected activities for students such as generating directions, use of the compass rose to help them connect their experiences to their representations. Her deep understanding of content area, of students’ understanding, of the affordances of technology for pedagogy, and of how technology impacts content representations allowed her to use existing technology in whole, highly effective and novel ways, which demonstrated her ability to creatively navigate the TPCK landscape(Koehler and Mishra, 2008).

Hammond et al, (2009) emphasize that having extended experience and having ICT skill (among other things) help teachers make "good use" of ICT, but postulate that these skills are not simply transferable to the classroom. Findings from this study support those many studies which suggest that contextual factors are often

unsupportive of teachers' efforts to integrate technology into their working context. Nevertheless, teachers in this study embraced the technology with a positive attitude and were prepared to be flexible to make it work. For example, when teacher faced a problem with one mode of communication they used an alternative mode to interact with students. Advice for teaching with video conferencing and training can expand the opportunities and minimize the constraints, for example how to best exploit this multimodality to achieve best result in terms of achieving learning goals. This study, therefore, suggests that course designers of online courses should provide ongoing support for teachers by providing training courses in which the trainer demonstrates ways to address these barriers (Longone et al, 1998) in order to facilitate interaction. However, each context is unique and any training approach, therefore, should take contextual factors into account.

This study, therefore, recommends in-service training for teachers where the trainer gives the training at the place where teachers work, using technologies that are available in that context (e.g. video conferencing technology). The departmental approach suggested by Barnes and Murray (1999) may prove a useful lens through which to view training in contexts. However, training which is delivered locally, and where trainer is embedded in the context might be an ideal scenario. Training courses which are designed for mixed groups of teachers should take into account that teachers work in diverse contexts of teaching and learning and not offer a one-size-fits-all approach. Teachers should be encouraged to analyze and reflect on the relationship between the circumstances of the context where they are working and the ideas explored in any training course (see the reflective approach suggested by Wallace,1991). However developing new knowledge base and skills facilitates but does not guarantee successful technology integration. Providing an adequate

infrastructure and internet connection is also a key factor in successful integration of technology in language learning. Lastly, course designers should also take technical support into consideration when designing online courses. This study shows that technical support and having an IT team for resolving technical issues as they occur is a key factor in ensuring that integration of tools such as videoconferencing technology and discussion forum are successful. However, the IT team, role is not only to resolve small scale technical issues as they occur, but also to technically facilitate teachers' work (e.g. connect students with subject matter and with one another, make sure that students are set up on their individual spaces, etc).

6.12 Recommendations related to methodology

The implications for research are related not only to findings from this study but also to research methods and methodology that are appropriate for the research of online environments. Particularly novel in this study is the use of the method of recorded audio graphic conferencing sessions to collect observational, descriptive data using observation schedule and the technique of note taking. This technique of collecting data through visual observation of events is very common in physical settings but there is no reason why we cannot use it in virtual settings as well. This means that data was first recorded on paper on the form of lesson observation (or observational notes) using an observation schedule. The process of identifying the themes and searching for patterns was not coded directly from the tapes (which is the case in many studies) but was coded from the observational notes (and from the snapshots which provided concrete description of content). This has many advantages.

Observational notes allowed coding aspects of the lesson using Mayring's (2000) observational coding scheme. The observation schedule provided an overview of the structure and content of each lesson. Often it takes a great deal of time for coders to figure out what is happening in a recorded lesson. The observation schedule allowed coding aspects of the lesson from the observational notes without even going back to the recoding. Some snapshots were used to communicate the interpretations made.

In this study live audio graphic sessions were regularly (and normally) recorded and uploaded to the institution website so that students could refer to them at any time. This meant that everything in the sessions was captured as normal practice without any interference on the part of the researcher. Observing recorded (rather than live) sessions contributed to minimizing bias due to observer effects, and would be of value to those seeking to research online language learning programs in the same or other settings.. The observation of the recorded sessions proved an excellent as a tool for obtaining descriptive data about the educational use of video conferencing technology. In similar settings, I recommend observing recorded rather than live audio conferencing for many reasons. Live observation is necessarily time limited and research might miss out important features and events especially when they occur rapidly. Recorded sessions provide a way to overcome this problem because the sessions could be replayed and watched repeatedly. The fact the sessions were

recorded allowed me to watch the same sample of behaviour multiple times and to describe the behaviour in great detail which increased the broadness and richness of the data. In addition, with recoded sessions I could see each lesson in its entirety which enabled me to study the duration of classroom activities by measuring their length on the recording and on the schedule. However, an alternative method which can be used is the use of multiple passes which can be made through the recordings of each session with the focus in each pass on a particular dimension. This would increase the richness but also the volume of data even more, but at the same time can be problematic particularly if there are time limitations of the research.

6.13. Summary

This study was an exploration of a rich online environment that incorporated a combination of synchronous and asynchronous CMC tools in addition to automated web-based materials, with the purpose of investigating the extent to which such an environment can support English language teaching and learning. It was recommended that some developments in the technology should be incorporated into the online environment. As well, human factors should be incorporated into the pedagogy such as teacher training.

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Appendix A: students previous experience

Students' prior learning experiences, learning conceptions, and learning approaches may influence their learning outcomes. The aim of this study is not to examine the extent of these relationships, or to determine the causal relationships of these factors. Hence, no attempt was made to control behavioural Events (Yin, 2003). Placing boundaries on the case is a procedure taken in order to avoid the 'tendency for researchers to attempt to an answer a question that is too broad or a topic that has too many objectives for one study' in order to ensure that the case 'remains reasonable in scope' (Baxter, P. and Jack, S., 2008, 546,547). The term bounded, in this study, does not indicate that students are solely bounded by the experience of teaching and learning in the English program; some certainly did other things associated with learning outside the English program and certainly brought prior experiences to the program. This actually was the case as participants sometimes referred to their experiences of teaching and learning English in face to face settings and compared this experience with teaching and learning English online. One of the teachers, furthermore, spoke about his experience of taking part in one an online course and compared his online experience with his experience as a teacher in the English program. This indicates that the participants concept of learning is derived from the cumulative effects of previous educational (and probably other experiences), and sometimes influenced by their satisfaction with the quality of specific learning experiences (whether face to face or online). The experiences of the participants were very enriching and a powerful tool that allowed the participants to explain and interpret events and to provide links, connections, coherence, meaning, sense, and information to the researcher, and sometimes to identify a gap (see the findings chapter).

Appendix B: Gathering data through technology

One of the criticisms of online research is about the representativeness of the sample when data is collected through online methods and whether there might be a bias towards those more interested in ICT, or even towards students who may be more familiar with ICT. Demographic difference that correlates with computer access may alter some research findings. In this study, students in the English program were online students who were familiar with computers because their education was delivered totally online which required a certain degree of computer literacy. Before taking the online course, they are introduced to an ICT induction course. Their computer skills may vary but all of them are expected to have certain skills in using computer technology that allows them to access the online course and use different features. They also have access to the internet through telecentrs which are provided by the SVU and in the internet cafes, and many of them have computers at home. Moreover, during the interviews, many of them mentioned that they used technologies such as Skype and yahoo messenger to communicate with their friends, which means that they are already familiar with these interfaces. Their choice of online (rather than traditional) education reduces the likelihood of bias concern that only students who are interested in ICT and in favour of the use of computers in the classroom take part in the interviews (bias towards those more interested in ICT).

Appendix C: Qualitative Survey Questionnaire And Invitation for Student Interview

Section I. please, completes the following questions as appropriate:

Age:
Gender:
Which level are you in?
Which class are you in?
How confident do you feel about using a computer for learning English? (Please underline as appropriate):

1	2	3	4	5
(Not confident At all)				(very confident)

Section II. Please give your personal opinion about the following (you can write from 5-10 lines to give your opinion under each question):

1. What do you like about the course?
2. What would you change about the course?
3. Do you feel the course meets your needs for learning English (speaking, writing, reading and listening)?
4. How do you prefer to work on the online sessions? Do you prefer to communicate and collaborate with other students in the online sessions or do you prefer to work only with the teacher?
5. How do you prefer to learn grammar? Do you prefer the teacher to explain the grammatical rules before working on the exercises or do you prefer to figure out the rule after working on the exercises, and why?
6. How and when would you like your mistakes to be corrected? Do you prefer the teacher to correct each mistake, give a general impression of your work, or underline the mistakes and let you correct them yourself?
7. Do you prefer the teacher to use Arabic sometimes during the sessions, or do you think that only English should be used? Why?
8. List the good points as well as any difficulties you may face during:

a) During the use of the different technological tools (e.g. Web Demo, discussion forum, chat room, email, library, personal space) do you have any difficulties when using these tools? Are they easy to use?
b) When working on the online materials
c) When attending the online sessions

Section III. Some interviews will be held with teachers and students on the same topic. Please give any ways of contact (e.g. your email or phone number) if you would like to participate in one of these interviews. Each interview will take about 1 hour and will be conducted by phone or online. Thanks in advance for your help.

Appendix D: Letter of Invitation and Interview Protocol For Teachers

My name is Mimas Suleiman and I am a Syrian doctoral student at Warwick University. After teaching in the English department in Tishreen University in Lattakia, Syria, I went to the U.K. to do my PhD in Computer-Assisted Language Learning. My research focuses on the opportunities and constraints of language learning in an online environment. As online learning is relatively a new type of teaching and learning, the purpose of this study is to understand to what extent the online environment supports language learning, by understanding the perceptions of teachers and learners in this regard, and their experience with using different tools when learning/teaching online. It is hoped that this study will serve as a tool for teachers and students to plan future experiences. The data collected for the purpose of this study is anonymous and will remain confidential. I will be happy to answer any questions you have about the study. Thank you for your consideration. If you would like to participate, please reply to this email. I will call you and arrange for an interview either online or on the phone.

Sincerely,

Mimas Suleiman

Overview of Interview Protocol

1. Tape-record the interviews if permission is granted
2. Interview using online communication programs or by phone.
3. Each interview lasted 60 to 120 minutes.

Interview Methodology

Interviews were implemented with a customized approach allowing for an in-depth investigation. Follow-up questions were used to stimulate interviewee memory. The interviewer used a semi-structured question design (Part III). Interview contained:

1. A predetermined set of 10-15 questions
2. All predetermined questions were the same for respondents

Designation of Interviewee:
_____
Name of Interviewee: _____
Date: _____
Start Time: _____
Finish Time: _____

Components of the Interview

1. Introduction (5-10 minutes)

My name is Mimas Suleiman and I am a Syrian doctoral student from at Warwick University. After teaching in the English department in Tishreen University in Lattakia, Syria, I went to the U.K. to do my PhD in Computer-Assisted Language Learning. My research focuses on the opportunities and constraints of language learning in an online environment. As online learning is relatively a new type of teaching and learning, the purpose of this study is to understand to what extent the online environment supports language learning, by understanding the perceptions of teachers and learners in this regard, and their experience with using different tools when learning/teaching online. It is hoped that this study will serve as a tool for teachers and students to plan future experiences. The data collected for the purpose of this questionnaire is anonymous and will remain confidential.

2. Permission to Record Interview

With your authorization, I would like to tape-record our discussion to get an inclusive record of what is said, since the notes I take will not be as comprehensive as I will require. No one other than I will listen to anything you say to me. Only I will have access to the records. The research results will describe what you and others have said predominantly in summation. No responses will be ascribed to you by name.

The open-ended questions are intended to obtain your personal experience and perceptions. The interview time may take about 1 hour. Would you give me permission to tape the interview?

Do you have any questions before we begin?

3. Sample Interview Questions as Transcribed

M: What do you like about teaching the course?
T1: Would you like me to speak in general?
M: yes, I would like you to tell me about any thing that you liked in teaching the English course
M: the first thing I would like to say is that students are not used to this but they are managing things. They are used to face to face teaching where the teacher tells them what to do, this are some of the things that we face. Actually I face difficulties with students in this regard like they ask me to send them grammar files or notes about what was taught in the session. They ask me to do that even though the recorded sessions are available and they can download them and listen to them, and even the notes that we use in the sessions to explain things are available in the online materials.
M: so you think that the students are dependent on the teacher
T1: they are used to the school system or the face to face way of teaching where students depend on the teacher and are not used to searching (for information) on their own. So for example, many times I give them websites so that they would be able to do more practice if they like to, only to find out when I check in the following session that very few of them had done that. They would like me to choose exercises and send them to them to work on, but I do not do that. But sometimes we have to send them a brief written record of what we covered in the session. So we face a difficulty here, students are not used to being independent, you see, they are not used to that… the SVU is based on distant learning where students have to do most of the part while teachers have to do only a small part, you see, but they are not used to this.
M: and what do you like about teaching the course?
T1:The good thing is that we have a broad range of resources because we teach English so , as you know, there is a very large number of websites so we can do whatever we want in the session, we can do any thing related to the lesson. This is an advantage for the students and they find it very useful. But I have to say that if I do not help them practice these things in the sessions, very few students do practice them outside the sessions, very few students do listening exercises or try to improve their listening skills or their reading skills by referring to certain websites for example, or utilising other resources. They depend on the teacher instead and do not go beyond what the teacher gives them, just like what happens in schools.
M: what skills do you teach in the course, and do you feel the course meets students' needs for learning English (speaking, writing, reading and listening)?
T1: Actually there is one skill missing in the course. As you know the course is based on distant learning so we do not have speaking at all and this is a problem. So students study too much grammar, they do a lot of writing. As for listening, if they do not work by themselves the only way to improve their listening is by listening to the teacher during the session…that is all we teach in the course. But many resources and websites are available for students who would like to work by themselves. Teaching reading and writing online has some advantages though, as we have the reading texts online and the same thing can be said about writing. so students benefit a great deal from this and they improve as well…I feel they improve when we teach them these things as long as we give them a strategy, but they have to work on this strategy on their own otherwise they would not be able to improve. They need to develop this strategy by learning how to improve their writing, how to read faster, how to find the

meaning of a certain word in the text without using the dictionary. But if students do not work on their own, we can face a problem in this case because we meet with them in the sessions for only about one hour and a half, we cannot work with them more than that. But the one skill that the course does not teach is speaking.
M: how do you prefer students to work in the online sessions? Do you prefer hem to communicate and collaborate with other students in the online sessions or do you prefer them to work only with he teacher?
T1: in the virtual class you cannot see the students as it is the case in physical settings. In physical settings you deal with a student rather than a name, so this is so difficult for us. It is difficult for the students and difficult for us as teachers. It requires a lot of work from us to ease the initial awkwardness, and the problem is we have only our voice, so voice plays a big role…the way you speak, the way you address each student, paying attention to each student, to each name, or to each ID, because we do not know who is behind this ID…paying attention to each ID on the screen so that they feel we are close to them. We need to encourage them to participate, make sure that they are not only sitting and listening, make sure they work on the exercises with me, try to give them the control to put the words in the right order for example, or to write or to ask a question. I may give them a break for five minutes where they tell me a brief personal story like something that happened with them or something they like. They do this as a class or individually. This creates a feeling of intimacy although it can be so difficult to create this atmosphere because students have to attend only 30% of the sessions so the student can attend only one lecture a week and still be eligible for doing the homework and the project. So the challenge that we face is how to encourage them to attend the sessions and it is not a simple challenge. As for me I use the methods I mentioned before, my voice, trying to approach them as people, as individuals by using their names, by joking with them, by sending them emails when they do not attend (the sessions) and let them know that we need them in the sessions instead of thinking that it is not a big deal. So giving them attention in this way encourages them to attend, it actually works and students usually attend more sessions although they do not have to.
M: so the interaction is between the students and the teacher.
T1: yes we have interaction (in the sessions). For example, when I ask students to read a text I use a timer. Without this timer it can be difficult to make sure that they are reading because we are in different places. So I use different methods. I use a timer and give them eight minutes for example to finish reading. They see the timer on the screen. When we do the exercises and they give me true false answers I ask them why, so they know that they have to give me a reason when they answer in a certain way, and show me how they reached this answer. So students have to prepare in advance for these questions, especially since we have a problem, I do not know if you have any idea, the materials we have provide answers to the exercises like any other materials, so students can get the answer with a click of a button, so they do not have to sit and read the whole text or do the whole exercise (to get the answer). He can get the answer by clicking on the ‘check answer’ button. Some students get the answer in this way and send it to the teacher, but others actually work the answer out on their own and the teacher can make sure that this is the case only through the type of interaction I mentioned before…so students have to be prepared because the teacher can ask him any question …because there are some students who try to give the impression that they know every thing but actually all they do is use ready answers.

M: Do you have any type of student-student interaction in the sessions?
T1: we definitely do not have student-student interaction. This is the problem. It is not possible to have student-student interaction. We have student-student interaction only when the students work on the project. We have what we call class project. We divide students into groups of twos or threes and each group has to submit a project which is assessed. So we have interaction but we cannot make sure that students use English when they interact. So we cannot tell if it serves the purpose because the two students (in the group) are supposed to interact (in English) but they may send emails to each other in Arabic instead and they may speak to each other on the phone in Arabic. I ask them to send me copies of the emails they exchange so that I would be able to know how much interaction took place between them. But they can still send each other emails in Arabic from their private accounts instead of sending them from the SVU account, or they can meet with each other if they are from the same city or in the same country. They manage to do that in one way or another. So in the project we can say that at least part of the interaction takes place in English but we do not have student-student interaction in the sessions.

Appendix E: Letter to Syrian Online University Seeking Study Approval

Date: 17 May 2007

Dear Dr Jamee:

Following our conversation on the phone on Thursday, I am pleased to introduce myself and the research project I am currently conducting:

My name is Mimas Suleiman and I am a Syrian doctoral student at Warwick University in the Institute of Education. After working for 2 years as a teaching assistant in the English Department in Tishreen University, Syria, I came to the U.K. to do my PhD in Computer-Assisted Language Learning. I am interested in the Syrian Virtual University as a research site. My research focuses on the opportunities and constraints of English language learning in the online environment. More specifically, I would like to know about the teachers' and students' experiences regarding the use of the internet for teaching and learning English in a virtual environment. The purpose of the study is to investigate to what extent the online environment supports learning by understanding the benefits that online students gain when choosing this type of learning as well as any difficulties they may encounter in their online journey. Hence I would be very grateful if I could gain access to some teachers and students in the English Program who would be invited to participate in the study by completing a questionnaire and answering some interview questions. I would also need to observe some online sessions and the English Courses. The data collected for the purpose of this study is anonymous and will remain confidential.

I would be pleased to answer any question at any time about the nature of the research and to address any concerns or suggestions regarding the study.

Best Regards

Mimas Suleiman

Appendix F: Letter from Syrian Online University Approving the Study

Date: 22 May 2007

To the Director of the Preparatory Year in the SVU

We received Ms Suleiman's request to conduct research in the SVU. Ms Suleiman is doing her PhD in computer assisted language learning in one of the U.K. universities and she is asking for permission to approach teacher and students in the SVU and to observe some sessions in order to evaluate the use of ICT in English language teaching. Ms Suleiman's request has been approved. This letter is to officially notify you of the approval of the project by the SVU. MS Mimas Suleiman will contact you soon. Please provide her with the user name and password of the course and the required information concerning English tutoring at SVU. Participation of teachers and students remain voluntary.

Name of SVU administrator
administrative staff in the SVU

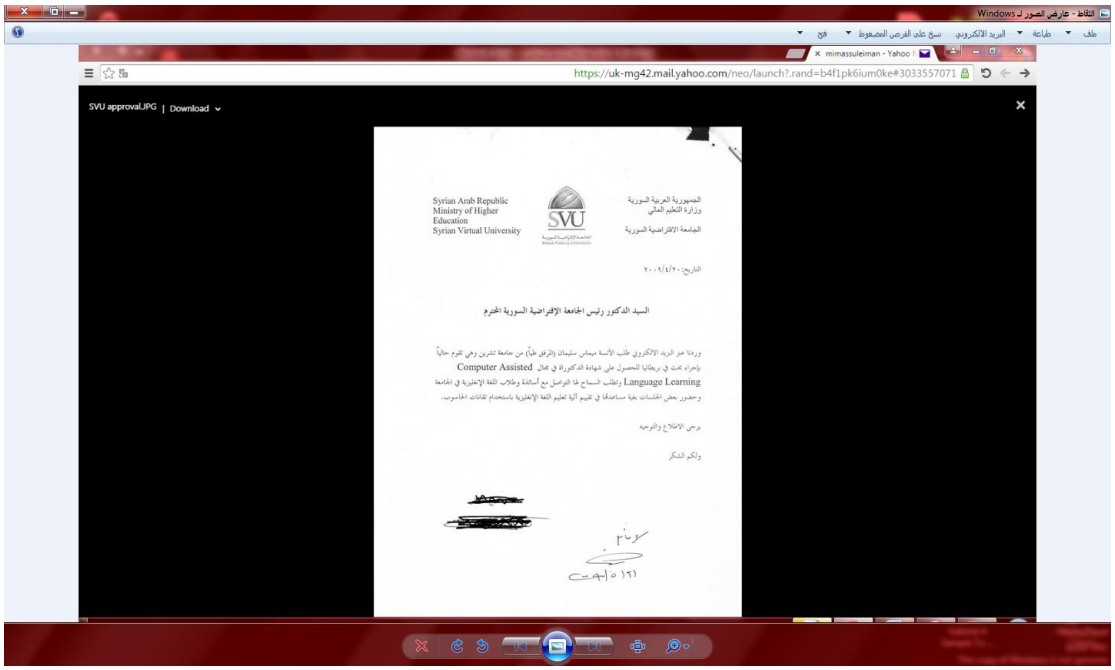
Date: 22 June 2007

Dear Mimas,
Sorry for the delay in responding to you. The new course is due to start some time next week, and we're overloaded with listing of classes, students and tutors.

We are happy to help you in whatever you ask for. Is there a questionnaire, a list of questions, certain specified points that you want us to respond to? I could always forward your questions to the tutors. As for the students, I'm not sure what your sample should consist of: fresh students, finalists, students taking the English courses, those doing other courses...etc. If you could be more specific on these issues, I will provide you with all needed details.

Looking forward to hearing from you.

Best,
Name of English Program Director
Director of the Preparatory Year in the SVU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Syrian Arab Republic
Ministry of Higher Education
Syrian Virtual University
الجمهورية العربية السورية
وزارة التعليم العالي
الجامعة الافتراضية السورية
التاريخ: ٢٠٠٩/٤/٢٠
السيد الدكتور رئيس الجامعة الافتراضية السورية المحترم
وردنا عبر البريد الالكتروني طلب الآنسة ميساء سليمان (الموفد علماً من جامعة تشرين وهي تقوم حالياً بإجراء بحث في بريطانيا للحصول على شهادة الدكتوراة في مجال Computer Assisted Language Learning وتطلب السماح لها التواصل مع أساتذة وطلاب اللغة الإنجليزية في الجامعة وحضور بعض الجلسات بغية مساعدتها في تقييم آلية تعليم اللغة الإنجليزية باستخدام تقانات الحاسوب.
يرجى الاطلاع والتوجيه
ولكم الشكر

Appendix G: Observation Schedule

Part A: Background Information

Date of session observed: session number:
length of session:
Level: class:
Name of tutor:
Details of session observed (number of students, Topic, aims and objectives…):

Part B: Guidelines (areas of observation)

1. Instructional characteristics:
a. Teacher activity: What teachers do/say; type of feedback; how they teach the activity; do they use presentation? Initiation? Feedback? Do they use the IRF?
b. Student activity: What students do/; how they work on the activities: individually? In pairs? In groups? Do they view slides and URLs? Take part in polls?
2. content
a. Activity type: Gap filling? Matching of sentence parts? Choose the correct answer from a drop-down menu? False/true answers? Structured/unstructured activities? Memorisation of forms/vocabularies? Student-student communication in writing form? In speaking form?
b. Skill focus: writing, speaking, listening, reading
c. Pedagogic focus: objectives of the activity: reinforcement? Fluency, practice?
d. Technology /tools used: text? Voice? Whiteboard? Video? Webcam? Application sharing? Slides? URLs? Word documents? Automated materials?
e. How is this technology /used? Two-way text chat? Two-way voice chat? Use of whiteboard to compose text? Draw pictures? Upload images?
3. Critical incident: any incident thought to be interesting during the intervals

Part C: Observation Notes (during the session)

What actually happens during the session? My on field comments. My thoughts during the sessions

Part D: Observation Notes (my reflection after the session)

Appendix H: piloting the observation schedule

In the end of the first year of the PhD program 2007, I designed an observation schedule and used this schedule to collect observational data from five recoded sessions. The schedule included an overview of the session (for example how many students attended each session) as well as points about the structure and content of each session. The observation schedule was used to collect observational notes that could be coded without going back to the recorded sessions.

The observation schedule focused on many aspects of the online environment and the teaching process within this environment. The descriptive information about the sessions and the background information (date and length of session, number of students, etc.) was collected first at the start of the session. Some information such as number of students in the sessions was recorded at the end of session as students usually logged into the session at different times (i.e. at the beginning, in the middle and, sometimes, near the end of session). The second section included notes about what was being said and done at specific times (time intervals) in the sessions. Data were initially recorded using pen and paper. Later, observation notes were done using Microsoft Word. The comments were descriptive noting what the faculty and students were doing or saying during the lesson. Observation also included taking some screenshots related to themes about how the sessions were conducted. Screenshots were selected on the basis that they showed faculty presenting an activity, or the students visibly engaged in an activity. For example, the following snapshot provides a visual description of the audiographic program which was used as the main methods of delivery of the course: it includes voice chat, keyboard chat, and recording features. The snapshot also shows how the teacher is using handwriting tools and Whiteboarding for giving example and for explanation of exercises.

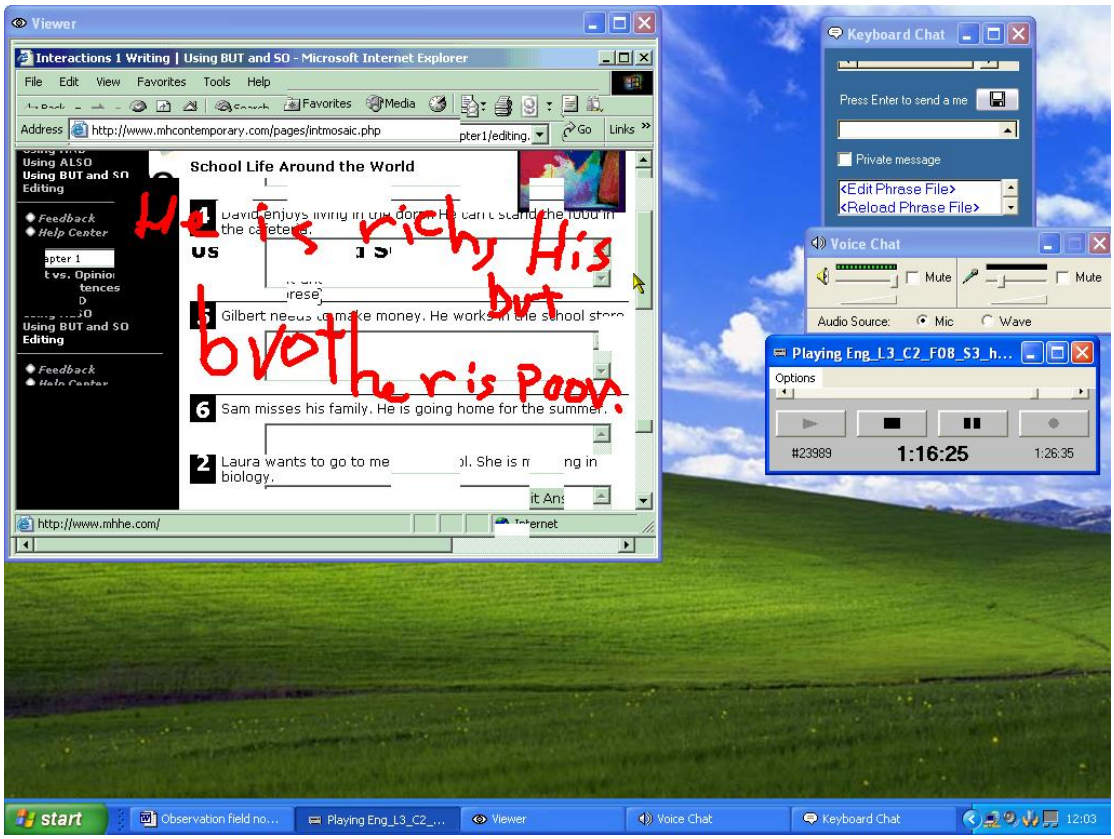


Figure: Joining sentences in the writing section: teacher uses both the hand writing tools and typing to write the answer for students

The observation process in the pilot observation was very simple: I played the session and took notes of the organization of the lesson and the use of instructional materials and so on. After I conducted pilot observations I realized that it was not possible for me to observe simultaneously all the aspects of teaching which I included in the schedule. In order to avoid focusing on one dimension of the session and lose sight of others, I decided in the main study to make multiple passes through the session, focusing in each pass on a particular dimension of description. I decided to play the sessions three times and each time I would focus on one aspect of the teaching and learning process. The dimensions of teaching I judged most important included the following: 1) the nature of the online session (virtual class where the teaching process is taking place). For example, how many students are in the session? Do they work in groups or individually? Do they have access to external resources and other materials? Is the class interrupted frequently by technical problems? 2) The nature of the materials that the teachers are teaching. For example, points about the structure and content of each session: What is the content of the session? How much time is assigned to developing language skills, how much time is devoted to language as a system? 3) The methods and techniques the teachers use in order to teach these materials. For example, what is the teacher's role during the session? What is student role? What kind of interaction do teacher and students engage in during the session, what kind of language learning expectations do teachers convey to students about the nature of language teaching and learning? What kind of feedback is used by teacher? Hence, the fact that the sessions were recorded rather live had a big advantage in this study (they could be replayed and watched as needed). The observation schedule

eased the process of observation. As it would have been impossible for me in a live session to observe and take notes of all these dimensions simultaneously. The observation schedule was used to collect observational notes which would be coded without going back to the recorded sessions.

Appendix I: Interview Protocol for Students

Overview

1. Tape-record the interviews if permission is granted
2. Interview in a neutral setting.
3. Each interview lasted 60 to 120 minutes.

Interview Methodology

Interviews were implemented with a customized approach allowing for an in-depth investigation. Follow-up questions were used to stimulate interviewee memory. The interviewer used a semi-structured question design (Part III). Interview contained:

1. A predetermined set of 10-15 questions
2. All predetermined questions were the same for respondents

Designation of Interviewee:

_____

Name of Interviewee: _____

Date: _____

Start Time: _____

Finish Time: _____

Components of the Interview

1. Introduction (5-10 minutes)

My name is Mimas Suleiman and I am a Syrian doctoral student from at Warwick University. After teaching in the English department in Tishreen University in Lattakia, Syria, I went to the U.K. to do my PhD in Computer-Assisted Language Learning. My research focuses on the opportunities and constraints of language learning in an online environment. As online learning is relatively a new type of teaching and learning, the purpose of this study is to understand to what extent the online environment supports language learning, by understanding the perceptions of teachers and learners in this regard, and their experience with using different tools when learning/teaching online. It is hoped that this study will serve as a tool for teachers and students to plan future experiences. The data collected for the purpose of this questionnaire is anonymous and will remain confidential.

2. Permission to Record Interview

With your authorization, I would like to tape-record our discussion to get an inclusive record of what is said, since the notes I take will not be as comprehensive as I will require. No one other than I will listen to anything you say to me. Only I will have access to the records. The research results will describe what you and others have said predominantly in summation. No responses will be ascribed to you by name.

The open-ended questions are intended to obtain your personal experience and perceptions. The interview time may take about 1 hour. Would you give me permission to tape the interview?

Do you have any questions before we begin?

3. Sample Interview Questions as Transcribed

M: thanks for completing the questionnaire and for doing this interview with me
S: no problem
M: I would like to discuss things further with you in this interview
S: ok
Me: are you in the internet café now?
S: yes
M: is the voice clear?
Muhannad: yes it is very clear… do you want the interview to be through voice chat?
M: yes, please… if that is ok for you
S: I have no problem with that
M: have you finished your exam
S: yes today I had my last exam
M: how was it?
S: it was good…I passed
M: congratulation… you knew the result very quickly
S: yes the use automation to correct the answers but this term we had a writing task
M: how would you like to work in the online session?
We have to work with the teacher in order to concentrate our attention on the lecture because the teacher asks us questions and we answer these questions and there are exercises that we have to do ourselves so we have to understand the grammatical rule (that the teacher is trying to explain) in order to use it to do these exercises …so the process of interacting with the teacher is very essential
M: do you like to interact with other students in the session?
S: the students (in the session) sometimes chat about issues irrelevant to the lesson; I prefer the chat to be about the lesson that we are taking… sometimes students chat for entertainment when they know each other, I am not with this but if the chat is relevant to the lesson then yes.
M: how can the char be relevant to the lesson?
For example if during the session we come across a word that I cannot understand and the teacher does not explain its meaning I may ask my classmate about its meaning…if he is better than me in English I may ask him about its meaning and he replies to me or about a grammatical rule or anything and he replied to me, it makes the lecture more understandable, that is all.
M: how would you like your mistake to be corrected? Would you prefer the teacher to correct your mistakes?
Obviously , because the teacher' correction is more reliable (than students') and this also makes that session more centred rather than letting everyone in the class speak and letting everyone reply , what is supposed to happen is that the teacher asks and the students answer … for example there are 20 students in the class, the teacher gives the lesson and we ask him questions, this makes the session (teacher) centred, it is not a discussion session where everyone can ask questions and everyone can answer these questions… the session takes place in this way, the teacher explains the lesson and we ask him and the teacher answer the questions.
M: the teacher asks and the students answer, so it's not a discussion session.
S: exactly… for example if we have rule about the simple past tense, the teacher explains this rule and then asks us to do some exercises on this rule and the students do these exercises… the students then ask the teacher and the teacher answer their

questions… I do not prefer if a student asks a question to get the answer to his question from other students, the one who is supposed to answer student' question sis the teacher… I prefer it to be this way and this is actually what is happening now (in the online session).
M: so you are not with making the session a discussion session?
S: a discussion session with 25 students in the class through the chat system that we have means that everybody would reply at the same time… it is difficult…it is not like when we meet in a regular classroom…if all the students ask questions and all the students replied to these questions (in the online session) we will end up with a beehive and none will understand anything, this is why I am saying that it is supposed to be that the students ask questions and the teacher answer these questions…because this make the session centred which enable the teacher to manage the session, I mean.
M: you mentioned the regular classroom, what were you trying to say about the regular classroom?
S: if 20 students for example meet with the teacher in regular classroom, the students can have a discussion with each other... when I speak to my classmate he waits till I finish and then replies to me and the same happens with other classmates…when my classmate starts to speak I let him speak and I wait, but when everybody speaks and everybody replies at the same time…this is why I am saying that it would be better to have a discussion session , but as we meet in an electronic classroom the session has to be centred.
M: how do use text chat?
We use text chat to communicate and the teacher uses the microphone … we can use the microphone but we have to ask the teacher to give it to us…we usually ask for the microphone if we want to say something that would require much writing or when the student want to speak to the teacher about something and can't do that in writing as we have to write in English most of the time and are not allowed to use Arabic…I am talking to you now (through voice chat) and if we were talking through txt chat we would not finish till tomorrow, so speaking is faster but because students cannot all speak with each other we have to use text chat…this technical issue makes it impossible for all to speak.
M: in the questionnaire you mentioned that out-class interaction between students is good if these students are in the same telecentre, but you think that in-class interaction is impossible?
S: I meant that when there are other students in the same telecentre I can discuss with them after the session about certain things from the sessions, but students in other telecentres like Damascus for example if I want to discuss with tem I have to use either the phone which is expensive or the MSN which is a bit difficult.. so it would be difficult to discuss with these students, but when I meet with other students face-to-face we can discuss and we can exchange files and we can exchange papers , but if the student is far away from me it is difficult to discuss with him.
M: you mention in the questionnaire that in-class interaction among students is not a good thing, why?
S: it is not good because we only use text chat…we don't have interaction.
M: you mentioned that if the interaction is about something relevant to the lesson then it is a good thing to do?
Interaction with other students is good if it is relevant to the lesson we are taking then it can be useful to us, but not when it is about something irrelevant to the lesson…but even if we want to ask each other questions about the lesson itself it is still difficult.

M: why do you think it is difficult?
S: difficult because the teacher would be explaining things and I would have to interrupt to be able to communicate with my classmate while the explanation is being made by teacher. I can always interact after the session with the students who are with me in the same telecentre, but not those who are outside the centre…I mean I cannot see them, I don' know where they are, I don't have their mobile numbers, I don't have their emails…but when I see other students with me in the centres attending the same session I can speak to them I we can have communicate after the session.
M: so you think that in-class interaction is not a good thing because the teacher would be explaining things to the students while the students are asking each other questions and even if these questions are relevant to the lesson there will still be interruption of the lesson.
S: interruption not of the teacher himself, interruption of the student himself. I mean interruption of the student in the sense that the teacher would be explaining things and he is not going to stop till the students have finished their communication, so the interruption happen to the two students who are interacting, certainly there will be interruption for these two students, the teacher may ask them a question just then and they wouldn't be able to know the answer…it is just like when two students speak to each other in the classroom and when the teacher asks the (a question) they would not be able to answer.
M: because they are not following with the teacher
S: yes because they are not following with the teacher
M: ok, let's now move to the next question. What do you think about teaching grammar in the course?
S: as a student who is interested in computer technology, I am interested in learning vocabularies more than leaning grammar…which would help me more when I speak to you in English if I knew more grammar or more vocabularies? If I know more vocabularies that would be more helpful because no matter how I speak you would understand me and no matter how you speak I would understand you, but if we focus on grammar there is going to be a problem…grammar all the time and then what? What is the point of learning grammar if we don't know vocabularies?
M: as for learning grammar you mention in the questionnaire that learning grammar is good because it helps us in writing and speaking
S: yes learning grammar is helpful in writing and in speaking…in the session they focus on grammar, and in the assessment today the focus was on grammar, the focus on grammar was unbelievable.
M: you mean that in the exam they focus on grammar and this is why learning grammar is good?
S: this is how it seems now but at the end of the day grammar is useful only if we can use it in conversation and this is when we learn new vocabularies and new words. It would be more helpful for students if they can use the grammar that they learn.
M: what skills would you like to develop; you say here in the questionnaire that you like to listen to the voice recordings to improve our ability to understand and to focus on listening
S: the teacher does not speak like an American or like a British person does…so we have (in the materials) recordings with American and British accent and each recording lasts for two or three minutes. we can listen to the person (in the recording) and see the transcription…this is good because if you listen only to the teacher (in the

session) and then communicate with a British or an American you will not be able to understand them because they speak fast…so it is good to listen to these recordings… we need more recordings and questions about what the person in the recording was saying to see if we were able to understand the accent or not.
M: why do you like to learn English?
I would like to learn English because I need it when I apply to any job…it would help me in my job and it helps me when I use the internet and this is why grammar is not useful , what is useful in this case is learning vocabularies.
M: so you like to learn English to use it in everyday life
S need it in everyday life in my work.When I use the internet and to interact with people in general…one can get a job offer if he/she knows English.
M: does the course meet your need for writing and listening? Here you mention that it meets your need for learning writing but not listening.
I meant that if we listen only to the teacher… the teacher has the same accent that we have, and we listen to him only when he reads something for us, this is different from when I listen to a foreign person in a real dialogue…so it is important to practice listening by listening to the recordings… although we have recordings (in the materials) each of these recordings last for two or three minutes only, this isn't enough, we need more recording.
M: so you would like to have more recordings to improve listening skills.
S: yes
M: do you try to improve your listening regardless of the course?
S: not really, there is nothing that encourages me to do that but I prefer it to be part of the English course itself.
M: here I ask if the course helps you improve your speaking skills and you say yes, how you improve your speaking skills.
Sometimes through MSN I speak with foreigners, but I don't do it often and I also do it in writing, we rarely use the microphone.
M: if we speak with regard to the English courses, how do you improve your speaking in the course?
We improve our listening but we almost never speak… the teacher is the one who speaks …only the teacher…the students rarely ask for the microphone to speak… we don't speak we only listen to the teacher.
M: so you meant to say that you improve your listening in the session by listening to the teacher
S: yes we improve our listening…but the teacher is Syrian not from Britain so we are able to understand most of what he says because his accent is better and clearer for us…he speaks like we speak but any British teacher would speak just like anyone in Britain speaks so we may not understand him.
M: you mentioned that you try to improve your English, how do you do that?
S: I chat with other people in English but I use only text chat, I usually don't use the microphone…I never tried to use voice chat…I use text chat to communicate with foreigner for entertainment and to benefit from it…I communicate only with foreigners…If I want to improve my English I need to speak with foreigners, this helps me learn vocabularies which I can use if I travel to Britain or to America.
M: you never tried to use voice chat?
S: no I never tried…the other person may not accept or may not like the idea and he may not understand me he may understand very little of what I say.

M: which Arabic or English, you said her that you prefer English because speaking is the best way to learn English
S: obviously if we use English when we speak we benefit a great deal from this…take for example someone who doesn't know much English and send him to Britain for two or three months, he will become good at English…this is why if two people speak in the English course it should be in English.
M: what about the teacher?
S: the teacher should also speak in English
Why?
Because we are learning English in the course, it's all about English, so it should be in English…only in very few cases when the teacher tries to explain a new word in English and we don't understand when it is a difficult word, the teacher ten can translate it into Arabic, but this happens in very few cases.
M: do you use the chat room to chat with other students?
No…I usually use the text chat window with the teacher …
M: do you mean during the session?
S: yes
M: do you use the chat with other students after the sessions?
Not really…we can use text chat window only during the session.
M: what about the chat room in the English course website, because you have a chat room there and students can use it at any time with another students I think.
S: I never tried that.
M: what about the discussion forum, the library and the workspace, have you ever tried to use these features?
S: not really…to be honest I have never tried to use these things and I don't know why…I never heard of them…they may exist but I never heard of them.
M: so you rarely access the materials on your own.
S: yes I rarely access the materials on my own, I access them during the online session I access them with the teacher…I usually access them when the teacher access them and I start to work on them.
M: during the online session?
S: yes
M: but after the session do you try to practice on your own?
Actually I have no time to do that, I spend my time at work, I don't have the time.
M: so it's enough to attend the sessions without working on your own on the materials?
S: till now it has been fine with me but I don't know if this will work when I study level 4.
M: thanks for your time.
S: my pleasure

Appendix J: Subjectivity and reflexivity

Research design in exploratory studies is flexible because the researcher is not aware of the context. The production and design of social research data is the result of social processes should be documented together with the particular research context in which this process took place. This should be done so that other researchers can learn from the experience and research guidelines can be established and other students know there will be ups and downs in the research process.

The study was presented in this thesis in a linear way and provided a plausible and readable account of the social phenomenon which was investigated. However, during the research process of this study I faced critical junctions where I had to make decision in reaction to circumstances of the field and how to proceed. Hence, in reality the research process was not linear but involved a large amount of messiness and uncertainty which are inherent and necessary component of qualitative and social research. The way this study started, therefore, did not predict the final product.

As the actual timeline of data collection was determined to a large extent by access, I will explain negotiating access to the environment and the judgments and decision which were taken during data collection and why they were made. In the first year of the PhD I was given approval to do my research in the SVU. I was assigned a user name and a password. These allowed me to access and analyses the interactive materials (which was done during my first year of the PhD program). This also allowed me to pilot the observation schedule and later to do the observations (in the second year of the PhD program). The online sessions which were observed ran in parallel with research study during the first and second year of the PhD.

However, the rest of data collection activities did not develop as intended in terms of time. Specifically, although I had access before doing the research and was assigned user name and password, I was not provided with access to students as I did not get any official help I decided to use personal contacts from outside the university in order to reach students. However, this effort was time consuming and the data collection time plan was delayed. As the number of students was relatively large, I used questionnaire and follow up interviews. The aim of the questionnaire was to get a wider view of the participants.

Although 200 students were enrolled in the English language course at the time of data collection, the researcher had no access to them through the university despite permission to conduct the study. As a result, snowball sampling was used to contact potential participants. In snowball sampling. Potential respondents are contacted and asked to give referrals to other possible respondents (Pratt, 2006). The questionnaire in the main study was distributed to 43 students who were located through snowball sampling, and returned by 24. Students who completed the questionnaires and who provided contact invitation were invited to participate in the interviews.

I then learnt that the director of the English program had changed which meant that I had to re-negotiate access as the director had to give consent before the teachers were approached. I had to wait till the third year of the PhD program to be given access to

teachers. I contacted the university many times during this period (second and third years of the PhD). I designed questionnaires to both students and teachers. I then realized that there were only 14 teachers in the course. The open ended questions which were originally designed for the questionnaire were slightly modifies and used in semi-structured interviews. In addition during interviewing, I felt that more in depth data could be collected from the participants if I use unstructured interviewing technique where the participants were free to bring up any issue related to the investigation. Some areas of investigation were not included in the original design of the study but emerged as significant themes for discussion and investigation as the data collection and analysis progressed.

Appendix K: analysis of the materials and observation data

In deciding what data to code during data analysis, I had to keep two research questions in mind: How is the online environment used by teachers and learners in the English programme in the SVU? I wanted to code aspects of teaching that allowed me to provide a valid picture of teaching in the online environment and to develop construct of teaching quality. To achieve this goal, I sought ideas of what to code from the research literature on language teaching and learning and studies on Computer assisted Language Learning that make clear recommendations about how ICT ought to be used for teaching foreign languages. These categories were used to compare and contrast the teaching aspects of the automated materials with the teaching processes of the online sessions. The following section include information about how data was coded according to Mayring's (2000) framework (specifically, how feedback was coded and how the stages of lessons were categorized).

Example 1: Type of feedback

Two examples of how feedback was coded, one with relation to the interactive materials and one in relation to the autographic sessions, are given below.

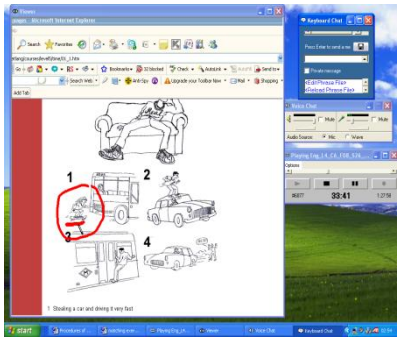
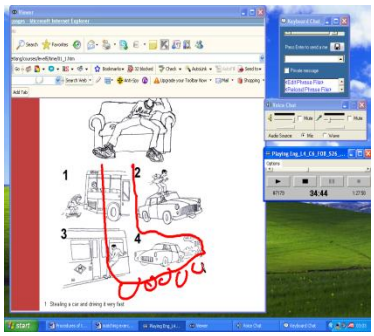
For example, in order to determine the type of feedback which characterises the interactive materials, the category of 'feedback' was presented in the form of questions: is it correct/incorrect type of feedback? Does it depend on reinforcement? Does it allow for originality/ flexibility; or does it focus on linguistic skills development? Is it flexible? Is it open? When I interacted with the online materials the computer analysed the input and gave feedback. I had two types of feedback depending on the input: when the answer was correct I had a message which conformed for me that I chose the right answer. When the answer was wrong I had a message which alerted me that the answer was wrong. When I put the correct message I had a message of praise and I was asked to move to the rest of the exercise. This type of feedback does not allow for originality and flexibility in student output of language and was typical of all automated exercises in the materials. The feedback was categorised as Drill-and-practice Feedback. The next stage was interpreting data from this category in the light of previous knowledge (theory and research). This type of feedback is one of the characteristics of Behaviouristic CALL (underlying pedagogy).This judgement (categorisation) was based then on a 'straightforward analytical matching' of the materials with this element from the criteria. Snapshots which were taken in the data collection phase of the study were categorised simultaneously using the same framework.

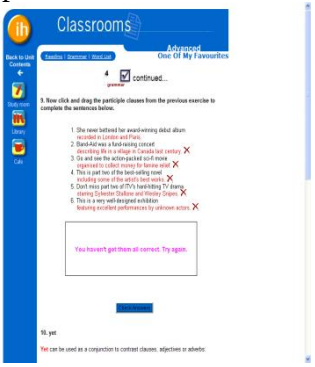
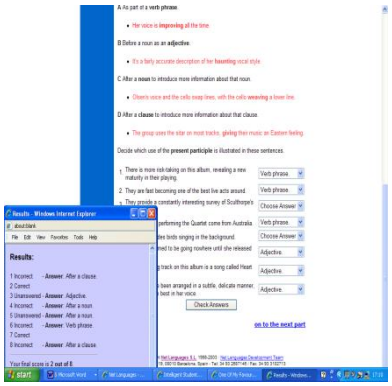
However, with observation data from the online sessions, the process of matching was not straightforward as it was more appropriate to use simple observational coding scheme first , i.e. top-down coding (Stigler, et.al, 2000), then match the categories which result from coding with the elements from the criteria. This approach included using codes which were apparent themes in the related literature (i.e. prior research driven approach). To illustrate the analysis process of the observation data, I will continue with the example of feedback introduced above. In order to decide the type of feedback which was given to students in the online

sessions, I coded observation data (observational notes). The coding process included highlighting segments (events) in the observation data where teachers used different ways to give students feedback. A segment was defined as a sentence or phrase that serves a single goal or function. For example, the segment of data 'Then she draws two pictures for them using the whiteboard and the free handwriting tools to show students the difference between 'roller skating', board 'skating', and ice skating.' was coded as 'eliciting technique'. The related snapshots were coded accordingly as they were dealt with as segments of data. For example one of the snapshots was 'teacher uses free writing tools for eliciting'. Other codes were related segments of data where the teacher was telling students why the answer was wrong, and those which show the teacher telling students why the answer was correct. These segments were coded as 'understanding of meaning'. In the next stage of data analysis these codes were grouped under the family code 'personalised feedback'. In some occasions, I watched the related parts of the sessions again in order to moderate my judgement that these were indeed examples of personalised feedback. The analysis process showed that students were given two types of feedback: right/wrong, and personalised.

The following table maps the process of coding feedback clearly. The table shows am example of how feedback was coded according to Mayring's (2000) framework:

Category	Subcategory	Definition	Examples from the present study	Coding Rules
feedback	Personalised feedback	Feedback that helps the student engage in metacognitive reflection on the problem and use that understanding to produce a correct repeated response Feedback that allows students to reflect on the reason for an error before accessing the explanation Error contingent feedback for each student input. This means that the system analyses student input	Examples: in the following extract the teacher uses Socratic method (elicitation techniques) of guiding and pushing students for the answer She is teaching them some vocabularies about skating. Rather than giving these vocabularies to the students, she is trying to get them to give it to her by drawing a little picture on the shared whiteboard. She is eliciting these vocabularies from them instead of saying it to them: 'The teacher then moves to another exercise where students have to tell what teenagers are doing in the pictures. A student says that the person in the picture is trying to catch the bus. The teacher says that this is not the point (this is not what the person is trying to do). She	Does teacher or computer enable students to follow up or elaborate on their initial response? Does teacher or computer asks follow-up questions and prompts? Does teacher or computer prompt and question pupils after their initial response, and also encourages them to ask their own questions? Are students patronised by anything other than being told

		and provides error specific feedback, exclusively in the target language, includes a facility that matches feedback messages to learner expertise and provides remedial exercises Feedback that uses the technique of teaching by asking instead of by telling.	asks them to pay attention to the equipment the girl in the picture is using. The teacher tries to draw the students' attention to this equipment (a skating board) by putting two lines under it in the picture. She gives the students this clue and then asks again: 'Look at that, what she is doing? A student uses sliding instead of skating and another student uses skiing to describe what is going on in one of the pictures. She tells him that there is a difference between skating and skiing. Then she draws two pictures for them using the whiteboard and the free handwriting tools to show students the difference between 'roller skating', board 'skating', and ice skating.' (Observation.1)  Teacher uses free writing tools for eliciting (observation1: the actual texts created by the teacher)  Teacher uses free writing	that the answer was incorrect? This includes: Does the computer give Feedback containing hints and :personalised messages such as 'well done Mary', Does the computer use graphics as feedback device: characters acting as a tutor Structural graphics: Simple pictures and drawings to illustrate a particular structural point or reinforce what is being introduced in textual and/or aural forms. Does the feedback provide explanatory comments on correct answers as well as erroneous ones? Does the teacher ask students for information, or requests information directly concerned with language for example by

			tools for eliciting (observation1: the actual texts created by the teacher)	asking what do you think, can you help, can anyone guess, instead of giving it to them?
	Drill-and-practice Feedback	Traditional Feedback which is based on positive/negative reinforcement mechanical feedback on rote learning of facts, vocabulary and grammar	Examples :  an example of wrong input with a prompt for students to have a second attempt  an example of feedback does not provide any indication as to why the answer is correct or	Are questions with only one correct answer? Does the teacher/computer use oral praise (using encouraging words such as 'good' or 'excellent' as appropriate)? Does the teacher/computer use non-verbal communication (such as smiles and nods of the head)? Do the teacher/computer use positive and encouraging feedback Praise, as a tool to inspire students? Is feedback restricted to right or wrong indications (Right/wrong feedback)?

Example of the deductive coding framework (adapted from Mayring, 2000)

Example2: Categorizing of stages

Another example of how data was coded according to Mayring's (2000) framework with relation to stages will be given below. In order to identify the teaching processes and content of online sessions, the criteria included an element which identified the aspects of teaching language as content (or system) where the focus was on analysis of language grammar, pronunciation, lexis; and language as a skill where the focus is on using the language (four skills: reading, writing, speaking, listening) rather than analysis of the language. This element of the criteria was presented in the form of questions. I asked the questions: does this activity process and content focus on using the language for speaking? Does it focus on using the language for writing? Is the focus on using the language for communication? Is the focus on using the language for developing fluency in writing, reading and speaking? is the focus on analysis of the language? Does it focus on grammar, lexis, and pronunciation? On developing students' vocabulary and grammar? The process of analysis included categorization and classification of the events and activities using a straightforward matching process. The process of matching included highlighting events and isolating activities directly from the data. The events and activities were identified by their content and teaching processes (e.g. teaching new vocabularies or grammatical exercises and rules). Using the same approach, snapshots were simultaneously grouped in categories as they were dealt with as segments of data. The analysis resulted in five different categories. Each of these categories included a unified set of activities that focused on one teaching objective at a time (e.g. teaching grammar) and which I called 'stage'. This process of classification of events from the observation data resulted in the number of different stages (see the table). I calculated the time spent on each of these stages. For example, in one of the sessions (observation number seven in the table) the teacher spent 34 minutes on reading and 38 minutes on lexis. The time was approximate and was calculated from the observation schedule using the time interval of note taking. The sessions did not include speaking neither listening stages. In one of the sessions (observation one in the table) the teacher initiated teacher led discussion during the reading stage which lasted 14 minutes. The rest of the time of the session (53 minutes) was spent on reading, lexis and grammar. The rest of the sessions did not include any discussion among students, but there was reading and writing stages. It was concluded that in relation to language as system or skill, the focus was both on analysis of the language and on using the language for reading and writing. However, there was no focus on listening or speaking skills (for example, there was no verbal communication or discussion among students). The duration of teaching activities was calculated by measuring their length on the observation schedule which included time intervals (timescale .with 5 minute intervals). The findings from this analysis are presented in chapter four: The stage structure of the skill focus and language focus in lessons.

Appendix L: Analysis of the Questionnaires and Interview Data

I conducted thematic analysis (Coffey and Atkinson, 1996:26) on the data where I searched for themes that emerged through reading of the data, first on a descriptive level, and then on an analytical level. I started the first stage of my analysis by applying an open coding process to both the teacher interview data and the student interview data. Coffey and Atkinson (1996:31) state that: 'We can start with a simple framework for coding based on what we as researchers are interested in. reading through data extracts, one might discover particular events, key words, processes, or characters that capture the essence of the piece'. The aim of this process is to condense the bulk of data 'into analysable units by creating categories with and from [the] data'. In this study, the coding process was done manually and involved highlighting comments and essential points which caught my attention at the time, as well as writing notes in order to assist me later in the development of themes, categories and subcategories. I also wrote the excerpts on small pieces of papers and made comments on these excerpts to summarize their idea (memos). Some of the codes that emerged during this stage included: verbal communication, spoon feeding, use of audio, explanations of answers, right/wrong answers; instant feedback, voice interruption, distortion of image, spontaneity, engagement in lesson, forming impressions of others, depersonalization, demotivation, internet connection, webcam, linguistic accuracy, etc. Questionnaires and interviews were coded separately in the sense that they were dealt with as two sets of data. Coding made during this stage presented an initial organization and sorting of meaning which led to the following stage of data analysis where I started to establish subcategories and main categories (Lincoln and Guba, 1985; Robson, 1993).

The main categories are family codes which can include a number of related codes that share common properties and revolve around the same dimension. For example, the 'social cues' category involved the following codes: forming impressions of others, engagement in lesson, depersonalization, turn taking etc. It is important to mention here that data analysis was an ongoing discovery and did not take place in one distinct phase or in a linear form. In some cases initial categories were revisited and revised (Simpson and Tuson, 1995; cited in Hoepfl, 1997). The family codes of the data from teachers interviews were reviewed to determine how far they converge with certain categories in the students interview data and vice versa. The process reflected certain relationships between the codes from both sets of data. Specifically, there were two types of relationships: first: certain codes from student interviews were related in some respect to the codes obtained from teacher interview data. For example, the thematic code 'lack of time' in student interviews data was related to the family code 'independent study in teachers interview data. The following relationship was generated from students interview data: ' lack of time on the part of the students influenced their ability to do 'individual study'. The following relationship was established between codes from teacher interview data: 'lack of independence' from the part of students influences their 'individual study'. The Family code 'individual study' then included thematic codes from both sets of data. Second, family codes such as 'interruption of voice', 'lack of speaking' were prevalent in both sets of data. Using this approach, I established categories that included codes from both teacher interview data and student interview data. At this stage of data analysis (axial coding),

student interview data and teacher interview data were handled as one set of data. The establishment of family codes (categories) in this way, i.e. where both sets of data were thought of as one entity, helped me reflect on the research questions: what are the perceptions of both teachers and students of the opportunities of the online environment; and the research question: what are the perceptions of both teachers and students of the constraints of the online environment? The axial coding phase produced nine categories which were related to both teachers and students' perceptions of the constraints of the language teaching and learning in the online environment: 1) technical problems; 2) lack of speaking practice; 3) lack of social cues; 4) limited opportunities for personal interaction; 5) time and effort; 6) lack of independence; 7) lack of support; 8) monitoring; 9) delay in synchronous interaction. 'As for the phase of axial coding of the observation transcript, it generated six categories' .The axial coding phase also produced the following categories which are related to both teachers and students' perceptions of the opportunities of the online environment: 1) Flexibility of synchronous learning; 2) Learning in class; 3) Lack of social cues; 4) Easy access to online resources and information; 5) Independent learning/absence of teacher; 6) Mastering and practising language structure; 7) Teacher Support; 8) Student-student interaction. I then started to look into each one of the above mentioned categories in order to make sense of the coding process so far. I started with the set of categories which is related to the constraints of the online environment. I then moved the set of categories which is related to the opportunities of the online environment. The majority of family codes seemed to fit into three main categories:

Perceptions of the audio graphic conferencing
Perceptions of web based learning
Perceptions of asynchronous CMC

The data from the questionnaire was analysed using the same framework, i.e. using thematic analysis procedures, where I developed thematic codes inductively directly from the data (i.e. data driven approach). The coding of the data from the questionnaires resulted in 23 family codes (categories) related to the opportunities of the online environment, and constraints of the online environment. Coding of the interviews and questionnaires was carried out separately. Categories were generated from questionnaires and interviews separately. The open ended questions of the qualitative questionnaires generated qualitative data. I then moved to the next step of data analysis where I explored the relationship between the categories of the interviews and the categories of student questionnaires, i.e. selective coding (Strauss & Corbin, 1998). The last stage of the process was to draw and verify conclusions from both methods in relation to students' perceptions of the opportunities and constraints of the online environment. The findings from the questionnaires supported the findings from the interviews. The findings from both methods were used together to draw the interpretations and conclusions which were drawn in this study with regard to participants perceptions of the environment. This process can be considered a test of the triangulation of methods in this study (Silverman, 2001, Yin, 2003). The next process, therefore, was to look into each of the categories and interpret data in the light of previous knowledge (theory and research) outlined in the literature review chapter of this study.

Although the purpose of this study is not to compare teachers and students' perceptions, it is worth mentioning that for the most part, students and teachers' perceptions converged as both of them expressed similar views, but sometimes they did not express the same perceptions (their perceptions diverged). For the most part, teachers and students shared similar views, e.g. both of them referred to technical difficulties. Sometimes, however, teachers and students saw certain issues from different perspectives. For example, from the perspectives of teachers, students did not do self study because they lacked the skills and the autonomy. For students, they did not do self study because they had life commitments and self study can be time consuming. Both views were underlined in the report of findings. It is worth mentioning here that although teacher and students' perceptions were merged during the process of data analysis, it was very clear during the report of data 'who said what' when I illustrated the findings with quotations (segments) from the raw data. Hence, there were three voices: the researcher' voice, students' voice, and teachers' voice.

Appendix M: Interpretations and conclusions

In this study a number of judgements are made about the online environment and conclusions are reached. These were well-supported judgements which were based on the different sources of data. Some judgements, however, were more speculative. The following discussion outline for the reader how the data was interpreted and conclusions were reached.

An example of a well-supported judgement occurs in chapter five when it is argued that technical difficulties can cause difficulties in teaching speaking and using voice chat. This is a trustworthy conclusion based on the triangulation of data sources (for example, observation data showing echo in voice when students use voice chat and showing teachers repeating words and writing them down as they experienced difficulties with hearing or being heard by each other when using voice chat, interviews with teachers where they explain that they have difficulties with using voice chat due to technical problems, interviews with students saying that technical problems cause reduction in teaching time which leaves little time for teaching speaking).Another example of a well-supported judgement occurs in chapter five when it is argued that students prefer to work in class with the teacher and with other students because the teacher provides students with academic support. An example was that the teacher provided students with an improved quality of feedback (personalised feedback) as opposed to the right wrong type of feedback which they got from the automated materials. This was a trustworthy conclusion based on the triangulation of data sources (for example, observation data showing teachers giving students personalised feedback give examples here, interviews with teachers where they explain that they do that , interviews with students saying that . in addition my investigation of the automated materials supported these data as it showed that these materials provided students with the right wrong type of feedback and that they depended on memorisation rather than understanding).

An example of a more speculative claim occurred in the same chapter, when it was argued that most students preferred to work with the teacher because students do not have the proficiency and study skills required for self study, which was another reason why students preferred learning in class. This was again based on multiple data sources as discussed in chapter five (questionnaires and interviews with teachers and students). However, as the observation focused on how students learnt in class but gave little information on their learning skills and ability, there was little evidence to support this judgement from the data observation. In addition, although students mentioned that they prefer to work in class with the teacher rather than alone, they did not explicitly mention that this preference is due to low proficiency level or lack of self study skills. However, there were sufficient data from interviews with students to permit the drawing of a speculative conclusion as will be discussed below.

During the interviews with teachers, many teachers said that students lack the study skills and motivation which are required for self study. These data was supported with data from the questionnaires and interviews with students who said that they preferred to work on the materials only with the teacher. When asked why they mentioned many reasons such as they felt motivated when they worked in class, teacher offered academic support, and they do not have time to do self study. They valued the academic support which saved them time and effort. Although students

did not refer to lack of skills and ability to do self study, it could be speculated that because students do not have the skills and proficiency required for self study, the amount of information and material they can cover when they study alone is reduced compared with the amount of information and materials that they can cover when they study with the teacher the academic support they get from the teacher result in an increased learning time a opposed to doing individual study. Since students work and study at the same time they cannot spend much time working alone on the materials they prefer to reduce the time with the help of the teacher). This speculation was emphasised by other data from student interviews. During my interview with students, only one student expressed the view that he preferred to work on his own rather than in class. He was the only student who expressed the view that meeting with other students was de-motivating as it required him to work at their own pace. The rest of the students expressed their appreciation of learning in class and described it as motivating while they described working alone as de-motivating. During my interview with this student, he mentioned that he successfully completed many courses which required individual study. Hence it could be speculated that his ability to do individual study and his preference to this type of learning is due to the fact that he developed the required learning skills that enabled him to do self study. Hence, working in the class with other students was de-motivating or him as it does not allow him to work at his own pace but required him to work at the class' pace which he described as slow. This student also had travelled abroad and had to use English in his communication with foreigners. Hence, he expressed his interest in developing his communication skills in English. It was speculated that he was self motivated to learn the language rather than learn it to pass the exam. So this is a speculation but it is based on multiple data sources (internal validation). This speculative conclusion was also supported by evidence from the literature (external validation). Specifically, the literature emphasises the importance of learning skills and self motivation for the success of distance and online students.

At other times there was variation within the data rather than instances that did not conform with the preliminary findings. In case when there were variations within the data, the conclusions were also based on the data but the judgements made were more speculative. An example occurs in chapter five where I argue that students complained about the lack of social cues but at the same time they did not want these cues. Students viewed the lack of social cues in online sessions as challenging for communication .However, there were other data to suggest that students and teachers valued the absence of social cues (body language) and felt advantaged that they could not be seen by other participants in the online session. The data suggested that students did not prefer the use of a webcam as they thought that it would not significantly improve the situation but add more complications regarding issues such as clarity of image. It would also deprive them from many advantages and add more problems such as discrimination or unequal treatment between males and females or between females, tension due to being visible to others, communication or less verbal students and so on. Hence it was clear that while students required smooth and successful communication and interaction, they preferred not to have a webcams in online class as they thought it would deprive them from many advantages. In other words, it was clear that students were aware of the importance of the importance of social cues and body language for communication in face to face teaching, but did not think that the presence of webcams would solve the problem or that it was the

appropriate solution to the problem in online settings. It could be speculated that students valued not the presence of social cues and body language during their interaction and communication in online settings, but the smooth interaction which they experienced in face to face settings compared with the challenges of online settings which resulted from the lack of social cues. Hence, students prefer to solve the problem of communication and interaction using different strategies other than using webcams during the sessions. Data from teacher interviews supported this speculation. Data from teacher interviews suggested teachers faced many challenges when teaching online compared with face to face settings due to the lack of body language and social cues. However, there was no emphasis on the use of webcams to solve the problem. Instead, teachers suggested that what is important is teacher' ability to manage interaction in spite of the lack of social cues. In other words, teaching without these cues can be challenging a skilled teacher is that who manages to deliver the session with the absence of social cues. This is consistent with other data where teachers used many alternative techniques in order to overcome the challenges of teaching online as they believed that it is teacher' job to deal with this and other issues and challenges of online learning. Later in this study a number of judgements are made about the online environment and conclusions are reached.

In addition to the examples given above, there were more challenging examples which resulted from instances that did not conform with the preliminary findings or from variation within the data. For example, at an early stage of the observation when I was watching (or attending) the online sessions I did not notice any interaction between students. When I finished data collection I coded the data and my conclusion was that there were no such activities in the online sessions. However, in order to make sure that this judgement was credible and well supported I consulted the data several times searching for events and segments of data that did not conform with this finding, I found one instance which was not consistent with this conclusion. I noticed that in one occasion the teacher tried to initiate discussion among students in writing. I coded this instance form observation data as 'teacher led discussion' and searched the data again for similar instances. However, there was only one occasion where this type of activity took place. I re-evaluated my conclusion so that this single occasion would be included in my findings. My modified conclusion was that the interaction was mainly between teacher and students and there was one occasion when there was teacher-led discussion.

As expected, there were sometimes coding problems which resulted from a tension between bottom up and top down coding, i.e. codes which were generated inductively from the interviews and open ended questionnaires, and those which were generated deductively from the observation of audio graphic sessions. The interviews helped me to a large extent deal with the tension between deductive coding of observation data and inductive coding of the interviews and open ended questionnaires. In this section I will briefly discuss this problem.

Inductive and deductive approaches to data analysis are quite different but in this study they were also complementary. There was sometimes coding challenge when I coded the open ended questionnaires, the interviews and the observation. In the answers to the open ended questions, there were categories which were not used by students in a precise manner. For example, in their answers to the open ended questionnaires students mentioned that audio graphic sessions helped them learn

speaking. In the interviews students spoke about the little focus on teaching speaking skills. The observation also showed little focus on teaching speaking skills. The follow up interviews allowed students to clarify their views. What students meant in the open ended questionnaire by 'learning speaking' was that they learnt how to pronounce words because they listened to the teacher when he spoke these words, i.e. they listened to teacher; speaking and they learnt from that. In the follow up interviews this category in the observation was coded as learning pronunciation.

I tried to find if codes and categories are related (i.e. Codes which were generated inductively from the interviews and open ended questionnaires and those which were generated deductively from the observation). For example, the category teacher support in the open ended questionnaires was too broad to know what exactly students meant: the category teacher support could refer to either teacher to teacher's academic support (e.g. feedback) or to emotional support (e.g. creating a sense of community) .On the other hand, the deductive analysis framework of the observation data made the distinction between teacher support and teacher feedback explicit.

Appendix N: Materials, Features and Resources

Criteria for judging the pedagogical features of the online materials and how they apply (in this study) to actual classroom procedures:

In order to determine the nature of these materials, the criteria were presented in the form of questions such as:

1. Do the materials focus on communication or on form (e.g. does it rely on drilling and patterning or does it create an environment where students can use the target language with each other?)
2. Do the materials teach grammar implicitly or explicitly?
3. Do they rely on negative / positive reinforcement (e.g. do they avoid telling students they are wrong, do they use the wrong-try-again model, do they congratulate students when they succeed).
4. Do they judge and evaluate every thing the student does?
5. Are they flexible or do they accept only one response
6. How the teacher and/or computer teach these materials inductively or deductively?